

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 725.—Vol. XIX.]

LONDON, SATURDAY, JULY 14, 1849.

[PRICE 6D.]

IMPORTANT IRON, COPPER, AND TIN-PLATE WORKS.

MESSERS. SHUTTLEWORTH & SONS have been favoured with instructions from trustees, under a mortgage deed, to SELL, BY AUCTION, at the Auction Mart, in London, on Tuesday, July 17th, at Twelve, the valuable and important establishments of the Governor and Company of Copper Miners in England, in C W M A V O N.

In the county of GLAMORGAN.—The establishment at Cwm Avon is of the most complete and finished character, and includes every power and erection essential for carrying on, in the most economical manner, and on a large scale, every branch of the IRON, TIN-PLATE, and COPPER TRADES.

The lease under which the property is held includes several thousand acres of land, abounding in rich seams of superior bituminous coal, including all the veins of argillaceous iron ore of the lower measures, which supply the large iron-works of South Wales, and in addition the black-band iron ore, which is wrought at a very low price per ton.

The collieries in the levels and pits now working afford almost an unlimited supply of cheap mineral, within an average of 5 miles of the shipping port. The establishment, which was erected at a cost of nearly half a million sterling, consists of the following separate works:

IRON TRADE—seven blast furnaces complete, capable of producing from 550 to 900 tons of pig-iron per week, with coke ovens and refiners attached, three puddling and five rail and bar mills of the best construction, which are capable of producing 3000 tons of finished bar or rail per month.

The **TIN-PLATE FORGES** and **MILLS** are capable of working up iron for finishing 1000 boxes of tin-plates per week, with chemical works attached, for the purpose of abstracting (during the conversion of wood into the necessary supply of charcoal for this branch of trade) the naphtha, acetic acid, and other products, and also for the supply of sulphuric and muriatic acids.

The **COPPER SMELTING-WORKS**, which are under one roof, and are capable of smelting about 600 tons of ore, equal to 50 tons of refined copper per week, and possess unusual conveniences for the supply of water, and the cheap deposit of slag.

The **COPPER ROLLING MILL** is one of the largest in Wales, with hammers, rolls, &c., attached.

The **FIRE BRICK MILL** can turn out 100,000 bricks per week. In the centre of the works is a large enclosed depot for storage of all goods, and also a line of workshops complete in every respect with the necessary steam engines, machinery, and tools for the supply of all kinds of patternmakers', joiners', sawyers', fitters', boiler-makers', smiths', and founders' work required for so large an establishment. The offices for conducting the business in the centre of the works are most complete. There is an excellent manager's house a short distance from the works, whilst detached, in convenient localities, are about 1000 neat four-roomed cottages, with sufficient houses of a better class for the respective agents and workmen, shops, and a large square fitted for the purpose of a market, and excellent stabling for upwards of 300 horses. The erections, works, and buildings, with the exception of a small blast furnace, are in the parish of Michaelston, held by the company for an unexpired term of 90 years, and the control of the population connected with the works is thus beneficially under the managing director of the works. The whole of the works are connected by rail or tram roads with the collieries and the shipping port, which is distant only two and a half miles, and the South Wales Railway passes close to the premises.

The premises may be viewed by application to John Biddulph, Esq., Coal-park House, adjoining the works, and parties obtained access to the general office of the establishment in Cwm Avon: or Messrs. J. C. and H. Freshfield, solicitors, New Bank-buildings; Messrs. Tison, Squance, Clarke, and Morris, solicitors, Coleman-street, at the Auction Mart; and of Messrs. Shuttleworth and Sons, 28, Poultry.

IN BANKRUPTCY.—TO COALMASTERS, IRONMASTERS, MINE ADVENTURERS, CAPITALISTS, AND OTHERS.

IMPORTANT SALE OF COLLIERIES, ENGINES, MACHINERY, AND SHARES IN COLLIERIES AND LEAD MINES.

MR. R. W. JOHNSON will SELL, BY AUCTION, at the Wynnstay Arms Hotel, in WREXHAM, on Thursday, the 9th day of August next, at the hour of Five o'clock in the afternoon precisely, by the order of the assignees of James Kyrie, Esq., in the following, or such other lots as shall be decided upon at the sale, and subject to such conditions as shall be then produced.

LOT I.—PENYCOED COLLIERY.

The leasehold estate of Mr. Kyrie, in the COLLIERY and the MINES of COAL and IRONSTONE under 90 acres of land, or thereabouts, called the PENYCOED COLLIERY, situated in the township of BRYMBO, in the parish of WREXHAM, in the county of DENBIGH.—And also the PLANT, consisting of a winding steam-engine, 6-horse power, incomplete, rails, weighing machine, and colliery materials, implements and utensils at Penycoed and Coedfelin.

The use of a day level, of about 1000 yards in length, lately driven for draining the mines, and other privileges, will be afforded to the purchaser.

An inventory and valuation of the plant, use of the level and privileges, will be produced at the sale, and the purchaser of this lot is to take the same at such valuation.

The Miners branch of the Shrewsbury and Chester Railway passes through this colliery, and for the use of the lease a wharf and siding have been constructed.

The colliery, by a creek colliery, especially in sinking the level, has recently been brought into operation, and its resources are now fully developed. A spirited purchaser will possess all the means necessary to carry on an extensive and profitable trade at comparatively little cost, and no risk.

LOT II.—PLASMAEN COLLIERY (NEAR THE FROOD).

The LEASEHOLD ESTATE of Mr. Kyrie, in the COLLIERY and MINES of COAL and IRONSTONE, under about 5 acres of land, in the township of BRYMBO, called the PLASMAEN COLLIERY.—Also the PLANT, consisting of pits, large pumping engines, pumps, horse gins, and weighing machine and colliery implements, specified in an inventory, which will be produced at the sale.

This colliery is situated near to the railway, and fronts a good turnpike-road, leading from Wrexham to Chester. It is comparatively free from water, and the engine is of sufficient power to drain adjoining lands, which might probably be taken upon advantageous terms. It is admirably situated to command a good local sale.

LOT III.—BRYMBO COLLIERY.

All those TWENTY-THREE (23) SHARES of Mr. Kyrie in the LEASEHOLD COLLIERY and the MINES and MINERALS under 185 acres of land, or thereabouts, situated in BRYMBO and BROUGHTON, in the parish of WREXHAM, called the BRYMBO COLLIERY; and the PLANT, consisting of pits, very large pumping engine, winding engine, rails, gins, and colliery implements, in excellent working condition, and of the best quality, and specified in an inventory, which will be produced at the sale.

This capital and well-known colliery is distant 3 miles from Wrexham, 10 from the shipping port of Chester, and 26 from the Birkenhead Docks. A branch of the Shrewsbury and Chester Railway has been brought to the pit's mouth, and by means of railway transit the facilities for the disposal—in distant as well as home markets—of the unlimited quantities of coal which can be raised from the mines, secure to the proprietors large returns for their capital. At present a good local sale is carried on, and there exists other capabilities for considerably extending the operations of the colliery, as well as for the erection of ironworks. The limestone district of Miners is connected by a branch railway with this colliery. The colliery is approached by excellent roads, which have been constructed at great expense.

Other TWENTY-THREE (23) SHARES in this COLLIERY will also be offered at the same time.

N.B.—The strata of coal under the estates comprised in the leases of the several collieries above-mentioned, are the Drovell, Powell, 2-yard Crank, Brassy, Blackbed Main, and Yard Coals. There are excellent ironstones; the faults are few, and the greatest portion of the minerals are entire.

LOT IV.—STEDDFOD LIMESTONES.

The THIRD PART, or SHARE, of Mr. Kyrie in the LEASE of the STEDDFOD LIME ROCKS, QUARRIES, and MINES, in MINERA, in the parish of WREXHAM. There are in operation three lime kilns and lime quarries adjacent thereto, carried on by the Steddfod Lime Company.—Also the PLANT, consisting of three kilns, cranes, barrels, rails, and implements, specified in an inventory, which will be produced at the sale. The kilns are situated near to the terminus of the Miners branch of the Shrewsbury and Chester Railway, which might be made available for the carriage of lime to all parts of the country. The lime rocks, extending over a large tract of land, are inexhaustible, and the lime is of the best quality.

An extensive trade is carried on by the company.

LOT V.—CRAIGIOG LEAD MINE.

The FOURTH PART, or SHARE, of Mr. Kyrie in the CRAIGIOG LEAD MINE adventure, in the parish of LLANANNON, with the PLANT thereunto belonging, consisting of large pumping engine, pumps, castings, horse gins, and other mining implements, an inventory whereof will be produced at the sale.

Mr. John Griffiths, of Glasfryn, Brymbo, will appoint persons to show the lots.

Further information may be obtained upon application to George Morgan, Esq., official assignee, Liverpool; William Rowe, Esq., mineral surveyor, Wrexham; or Messrs. James and Owen, solicitors to the assignees, Wrexham, at whose offices full and detailed particulars, accompanied by maps and plans, may be inspected.

EXTENSIVE IRON-WORKS FOR SALE,
BY PRIVATE BARGAIN,
THE BLAIR IRON-WORKS.

Belonging to the Ayrshire Iron Company, with the whole MINERAL FIELDS held by the said company, under favourable leases, including the MALLEABLE IRON-WORKS, immediately adjoining, so far as erected—all as particularly described in former advertisements.—There is a large STOCK of IRONSTONE on the ground, which may be had at a valuation.

For further particulars apply to Mr. Bignart, at the works; Mr. Watson, 22, and Mr. Brown, 25, St. Vincent-place, Glasgow; Messrs. McClelland and Mackenzie, accountants, there; Messrs. Gibson-Craig, Dalziel, and Brodie, W.S., Edinburgh; or Messrs. Montgomerie and Fleming, writers, Glasgow—the last being in possession of the title-deeds.

Glasgow, June 29, 1849.

TAMAR GRANITE QUARRY, AT GUNNIS LAKE, TO BE LET.—TO BE LET, by the year, or for a term, as may be agreed on, with immediate possession, all those very superior WHITE GRANITE WORKS, situated at GUNNIS LAKE, in the parish of CALSTOCK, CORNWALL, known by the name of the TAMAR GRANITE QUARRY.

These works are extensive and most advantageously situated, both for working and the transit of the produce, being within a quarter of a mile of one of the quays on the navigable River Tamar, where freight can at all times be procured, and have been successfully worked for a considerable period.

The quality of the stone needs no comment, it being generally acknowledged to be unrivalled for its excellence, both for grain and colour.

For terms of letting, application to be made to Mr. J. Richards, brewer, Tavistock, the proprietor; or to Mr. Davis, of the same place, auctioneer.

Tavistock, July 3, 1849.

VALUABLE AND EXTENSIVE MINES OF COAL AND IRONSTONE.

TO BE LET, ON LEASE, on most advantageous terms, the COAL and IRONSTONE under a very large tract of land, in the parish of RUABON in the county of DENBIGH, adjoining the Shrewsbury and Chester Railway.

The proprietors of the ESTATES on which the Ponkey and Aberderyn Iron-Works were formerly carried on, have made arrangements TO LET BOTH PROPERTIES TOGETHER, which will give the lessee the facilities to carry on a lucrative business—very rarely to be met with.

The COALS and IRONSTONE on these ESTATES may be raised at very much less than an average cost, and the quantity proved in them (besides what are under a very large portion of one of them, in which there is no doubt they will be found) is estimated will supply iron-works with materials to make 400 tons of pig-iron weekly for upwards of 30 years, as well as 50,000 tons of the much and justly-celebrated Yard and Wall Bench Coals per annum for sale, for the same period.

Printed particulars of the property, and lithographed plans of the estates, showing the minerals under them, with calculations as to the expense of making iron from them, as compared with that of manufacturing it in Staffordshire, may be had upon application at the office of the Mining Journal, 36, Fleet-street; and at J. Boydell's, 54, Threadneedle-street, London; and at Messrs. Longville and Williams, solicitors, Oswestry.

Oswestry, June 6, 1849.

STEAM-ENGINES ON SALE.—No. 1.—A SECOND-HAND DOUBLE POWER CONDENSING MARINE ENGINE, with cast-iron framing and slide beams; cylinder 32 inches diameter, 3 feet stroke; air-pump, lined with brass—no boiler; 47-horse power, with 7 lbs. pressure on the square inch, and very suitable for pumping and winding in a colliery, lead mine, or to drive any kind of millwork.

No. 2.—A DOUBLE POWER CONDENSING MARINE ENGINE, quite new, but unfinished, with cast-iron framing and slide beams; cylinder 43 inches diameter, 34 feet stroke; 91-horse power, with 7 lbs. pressure on the square inch—no boiler; and suitable for the same purposes as No. 1.

No. 3.—A DOUBLE POWER CONDENSING LEAD BEAM WINDING ENGINE; cylinder 22 inches diameter, 41 feet stroke; hand gear, with button valves, parallel motion, fly-wheel, wagon boiler, with all its fittings; door, grate, head-plates, &c.; two large cast-iron bell cranks and pedestals, with strong wrought-iron connecting-rods, for pumping water from two lifts of pumps 100 yards deep, two rope wheels, suited for flat chains, apparatus to throw in and out of gear, pit-head pulleys, &c., 23-horse power, with 7 lbs. pressure on the square inch, and suitable for the same purposes as No. 1.

No. 4.—A NEW DIRECT ACTION ENGINE, double power, suitable for a corn-mill, or winding in a coal or lead mine, with improved spring packing for piston; ditto ditto for nozzle valves; cylinder 15 inches diameter, 24 feet stroke, 25-horse power, with 35 lbs. pressure on the square inch—no boiler.

No. 5.—A DOUBLE POWER LEAD BEAM ENGINE; cylinder 30 inches diameter, 4 feet stroke, slide valve, parallel motion—no boiler, and quite new; 52-horse power, with 35 lbs. pressure on the square inch, and suitable for the same purposes as No. 1.

No. 6.—A DOUBLE POWER BEAM WINDING ENGINE; cylinder 15 inches diameter, 34 feet stroke, with a cast-iron portable frame, slide valve, hand gear, parallel motion, flat-rope wheel, spur and pinion wheels for the same; 29-horse power, with 35 lbs. pressure on the square inch—no boiler, and suitable for the same purposes as No. 1.

No. 7.—A SECOND-HAND PUMPING ENGINE, with cylinder 48 inches diameter, 7 feet stroke in the house and the same in the pit, with air-pump, condenser, hand gear, &c., pumping three lifts of pumps 100 yards; working barrels 14 inches diameter—no boiler; 100-horse power, with 7 lbs. pressure on the square inch.

No. 8.—A NEW DIRECT ACTION DOUBLE POWER HIGH-PRESSURE STEAM ENGINE; cylinder 9 inches diameter, 2 feet stroke, slide valve, sliding parallel motion, with grate, door, boiler and fittings complete, with winding apparatus and pit-head and pulley, and was lately at work, for about four months, on a pit 100 yards deep; 10-horse power, with 35 lbs. pressure on the square inch.

THREE SECOND-HAND CYLINDRICAL BOILERS, little worse than new, 41 feet diameter, and 32 feet in length, with spherical ends, and now in thorough repair; and suitable for any of the above engines.

ONE PAIR of 90-horse power SECOND-HAND MARINE BOILERS, that have been working a pair of 40-horse power engines, and are now in thorough repair.

NEW BOILERS, of any shape, can be MADE at a short notice, to suit any of the above engines.

For further information apply to EYTON & CO., MASTIN FOUNDRY, NEAR HOLYWELL FLINTHURST.

JAMES BOYDELL, LAND, MINE, AND MACHINERY VALUER, AND AGENT.

No. 54, THREADNEEDLE-STREET, LONDON.

HAS TO DISPOSE OF A PATENT RIGHT for BUILDING VESSELS with IRON, on a principle which combines increased strength with greater economy of manufacture.

Also, ONE for the CONSTRUCTION of IRON ROOFS, on a like principle. A specimen of this may be seen as a roof covering one of the retort houses of the Birmingham and Staffordshire Gas Company, by permission of Mr. Cliff, the engineer, at the works.

Also, ONE for IRON JOISTS and RAFTERS, and for a plan of joining large plates and sheets of iron.

Also, ONE for the AMALGAMATION of STEEL and IRON—in the progress of the manufacture of the latter, by which a great saving may be effected in the cost of making edged tools.

The LEASE of a very celebrated FOUNDRY and ENGINEERING ESTABLISHMENT, on the River Dee, complete, with fixtures, machinery and tools, in working order, and ready for any parties to embark at once on building first-class iron steam-vessels, and marine and locomotive engines.

The above will be found worthy the attention of any parties desiring to invest money in a profitable business, as they will be disposed of upon terms which will ensure an unusual return to the purchasers of them.

Also, SOME COAL and IRONSTONE MINES, FREESTONE QUARRY, and a large FREEHOLD ESTATE.

Also, STEAM-ENGINES and MACHINERY, of all descriptions, and which he is enabled to offer at very moderate prices.

Also, SHARES in a well-known valuable SLATE QUARRY, in CARNARVONSHIRE.

Also, SHARES in, or the whole of, a GAS-WORK, which supplies exclusively a populous town in Shropshire, and which can be greatly extended.

Particulars of the above may be had, upon application, at 54, Threadneedle-street.

TO ENGINEERS, BUILDERS, AND ARCHITECTS.

JAMES BOYDELL, 54, THREADNEEDLE-STREET, having been a very large manufacturer of machinery and irregular shaped iron, and having accomplished the rolling of some descriptions of the latter, thought by many to have been impracticable, will be happy to ASSIST any ENGINEERS, SHIPBUILDERS, and ARCHITECTS, in the planning the details of what IRONWORK they may have occasion for, or bringing to perfection any invention in machinery, as well as procuring such materials for the purpose as they may require.

DUISBURG IRON-WORKS AND MINES, IN WESTPHALIA, CLOSE TO THE RHINE.

Managed in England according to the principles of the "Cost Book System," and in Prussia as a *Société en Commandite*, under laws limiting the liability of the shareholders to their personal subscription.

Company's Offices, 28, Moorgate-street, City.

GROWA SLATE COMPANY, TREVAIGA, CORNWALL.

6000 parts, or shares, of £5 per part, or share (all paid), whereof 2800 parts, or shares, are offered to the public.

NOW IN WORK ON THE "COST BOOK" PRINCIPLE.

The QUARRY is situated on the CLIFFS, within one mile of the port of Boscawen, vessels load at the quarry during three-fourths of the year.

The SLATE forms a remarkable exception to the general constitution of this mineral; and whilst its applicability to the several purposes of roofing, flooring, and the usual adaptations of the grey, blue, and other slates, a new series of utilities has been developed to the directors (by a gentleman who has, in consequence, been appointed superintending engineer to the company), which will extend its application in a variety of preparation to an extensive and completely novel character of uses.

A PATENT is in course of completion, for the purpose of securing to the shareholders in this undertaking the exclusive benefits to be derived from one of the most attractive discoveries of the present age.

Prospectuses, and all other information, may be obtained at the offices of the company, 57, Threadneedle-street, London; where specimens of the slate may be seen; or to the solicitor, John Chapple, Esq., 70 A, Aldersbury. Prospectuses can also be had at the office of the Mining Journal, 36, Fleet-street.

London, May 16, 1849.

TO SMELTERS.—WANTED IMMEDIATELY, A SMELTER, to SUPERINTEND the CONSTRUCTION of SILVER-LEAD SMELTING WORKS in SWITZERLAND. He will be required to furnish testimonials of his respectability and experience as a smelter and refiner, which will bear the strictest investigation.—Address "A. B.," the Bell, Borough Market, London.

A GENTLEMAN, a native of Freyberg, who has been some years in the Royal Saxon Service of Mines, is desirous of meeting an ENGAGEMENT, either in ENGLAND or ABROAD. He has a general knowledge of mining and chemistry, understands assaying in all its branches, and is perfectly acquainted with the smelting and refining of copper, lead, silver, and gold.—Address "G. T.," at the office of the Mining Journal, 36, Fleet-street, London.

TO BE SOLD.—BROWN UMBER, OCHRE, and WHITE CHINA GLAZ, and may be had at a short notice. The samples are of the first quality, and of proved value.—Address Mr. C. Dyer, Luxborough, Dunster, Somerset.

TO ENGINEERS AND OTHERS.—WANTED TO PURCHASE, upon reasonable terms, a SECOND-HAND HIGH or LOW PRESSURE PUMPING-ENGINE, with or without pumps; the power to be equal to from 30 to 40 horses.—Apply by letter, to Mr. J. Uuwin, 31, Bucklersbury.

ENGINE FOR SALE, BY PRIVATE CONTRACT.—A 40-inch cylinder ENGINE, with boiler, about 10 tons, in excellent condition; it is situated within 2 miles of a sea-port.—Also FOUR HUNDRED TONS of PITWORK, of various sizes, and several CAPSTANS, SHEARS, ROPES, and CHAINS.

For further particulars apply to Mr. Henry Burgess, Camborne, Cornwall.

TO IRONMASTERS, FOUNDERS, &c.
MR. W. D. STARLING is instructed to SELL, BY PRIVATE CONTRACT, a QUANTITY of OLD RAILS and CHAIRS; also, several LOTS of CONTRACTORS' PLANT.—Application to be made at his office, 13, Change-alley, London, June 14, 1849.

LOANS ON DEBENTURES.—The CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS OF LOANS, in sums not less than £500.—Applications to be made or addressed to this office.

129, George-street, Edinburgh, May 30, 1849. D. RANKINE, Treasurer.

MINING PROPERTY.—MR. JAMES HERRON, MINE AGENT, 33, CLEMENTS-LANE, LOMBARD-STREET, has received instructions TO DISPOSE OF SHARES in FIRST CLASS MINES, paying regular dividends, and yielding to the purchaser from 17½ to 25 per cent. upon his outlay. He is also in a position to transact business in the following—viz.: East Wheel Rose, West Caledon, South Wheel France, Great Devon Consols, Wh. Seton, Trelawny, Mary Ann, Bedford, Tamar, H. Imbush, South Tolgas, Condurrow, Trulogish, St. John del Rey, Keswick, Rhymney Iron, and United Mexican Mines.

MR. EVAN HOPKINS, C.E., F.G.S., CONSULTING ENGINEER AND INSPECTOR OF MINES. May be CONSULTED DAILY (by letters) on all subjects connected with MINING PROPERTY, both Home and Foreign.

BARRINGTON-ROAD, BRIGHTON.

MR. C. S. RICHARDSON begs to announce that he has REMOVED his OFFICES from Whitefriars-street, Fleet-street, to 15, OLD BROAD-STREET, CITY.

JAMES LANE, MINING SHARE DEALER, 80, OLD BROAD-STREET, LONDON.

ANGLO-MEXICAN MINING ASSOCIATION, 5, Broad-street-buildings, July 12, 1849.—A SPECIAL GENERAL MEETING of the proprietors of this association will be HELD at the office of the company, 5, Broad-street-buildings, on Wednesday, the 15th day of August next, at One o'clock precisely.

ALFRED GODFREY, Secretary.

CONSOLIDATED COPPER MINES OF COBRE ASSOCIATION.—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of proprietors of this association will be HELD at the office of the company, No. 29, Austinfriars, on Tuesday the 17th July next, at One o'clock precisely.

By order of the court of directors, WM. LECKIE, Secretary.

COPIAPO MINING COMPANY, 29, Austinfriars, July 13, 1849.—Notice is hereby given, that the HALF-YEARLY MEETING of the shareholders in this company will be HELD at their office, 29, Austinfriars, on Thursday, the 26th inst., at One o'clock precisely. At this meeting two directors, and one auditor, will go out of office by rotation, but, being eligible, will offer themselves for re-election. Notice is further given, that this meeting is made SPECIAL, for the election of a director; any shareholder desirous of becoming a candidate, is requested to give seven days' previous notice of such intention in writing to the secretary.

By order of the directors, FRED. GRELLET, Secretary.

CALLINGTON MINES COMPANY.—At a Quarterly General Meeting of shareholders, held on Wednesday, the 4th of July, at the offices of the company, 44, Finsbury-square—it was Resolved.—That the reports and accounts, now submitted, be received, adopted, and entered in the company's cost and transfer book.

LEWIS MINES COMPANY.—At an Annual General Meeting of shareholders, held on Wednesday, the 4th July, at the offices of the company, 44, Finsbury-square—it was Resolved.—That the reports and accounts, now submitted, be received, adopted, and entered in the company's cost and transfer book.

Resolved.—That the thanks of the meeting be presented to the chairman and directors, for their able and assiduous conduct in the management of this company's property.

LOSTWITHIEL CONSOLS.—At a Meeting of adventurers, held at the offices, on Thursday, the 12th inst., P. DAVEY, Esq., in the chair.

Amongst other business—for which see particulars in another column.—It was resolved.—That a call be now made of £1 per share on 253 shares, payable in one month, to the bankers of the company, the London and Westminster Bank, South-west Branch.

JAMES CROFTS, Secretary.

TAMAR SILVER-LEAD MINING COMPANY. THIRTEENTH DIVIDEND. Notice is hereby given, that a DIVIDEND of TEN PER CENT. has been declared by the directors upon the paid-up capital of this company, PAYABLE on Wednesday, the 11th proximo, and succeeding Wednesdays, between the hours of Twelve and Four. The certificates are required to be left at the office two clear days, in order to be examined and marked.—44, Finsbury-square, London, June 21, 1849.

BICKFORD'S PATENT SAFETY FUSE.—The Patentees of the ORIGINAL, and only real, SAFETY FUSE, beg to inform Merchants, Mine Agents, Railway Contractors, and all persons concerned in Blasting Operations, that, for the purpose of protecting the public in the use of a genuine article, the PATENT SAFETY FUSE has now a thread wrought into its centre, which being patent right, infallibly distinguishes it from all imitations, and ensures the continuity of the gunpowder. The Safety Fuse is now protected by a Second Patent, and manufactured by greatly improved machinery.

BICKFORD, SMITH, & DAVEY, Camborne, Cornwall.

STRUVE'S PATENT MINE VENTILATOR.

TO COLLIERY PROPRIETORS. Quantity of air passed through a Mine almost unlimited, to the extent of 250,000 cubic feet per minute, if necessary—depending on size of apparatus.

No injury to pumps, tubbing, chains, ropes, or pitwork.

Guages kept clear.

Not influenced by barometrical and thermometrical changes in the atmosphere, or by wind.

Current of air undeviating.

LICENSES will be GRANTED on application to Mr. WILLIAM PRICE STRUVE, C.E., Swansea.

The ventilator has been erected at the Eaglesham Colliery, near Neath, and is perfectly efficient, and may be viewed on application to the proprietors, Messrs. Pennock and Evans, Neath.

WIRE ROPE.—The Undersigned beg to inform the public, that they have become SOLE LICENSEES of Mr. ANDREW SMITH, for the MANUFACTURE and SALE of his PATENT WIRE ROPE; and having fitted their premises with his very superior improved machinery, have only to assure those who may favour them with their orders, that the same care and attention shall always be bestowed which they have reason to believe, has secured them such general support.

LIGHTNING CONDUCTORS, SIGNAL CORD, and SASH LINE, always in stock.

WILKINS & WEATHERS.

Patent Wire Rope Works, No. 39, High-street, Wapping, London.

TO ENGINEERS AND BOILER MAKERS.—The BIRMINGHAM PATENT IRON TUBE COMPANY. MANUFACTURE PATENT LAP-WELDED IRON TUBES (under Mr. R. Prouser's Patent) for Marine, Locomotive, and all Tubular Boilers. Also, Tubes for Gas, Steam, and other purposes. All sorts of IRON GAS FITTINGS.

Works—Smethwick, near Birmingham.

LONDON WAREHOUSE—No. 6, Upper Thames-street.

INSPECTION OF MINES AND COLLIERIES

The machine represented in the accompanying engravings was invented by Ransom Cook, Esq., late superintendent of the Clinton County State Prison, in the State of New York, and employed for the separation of the magnetic ore at the mines in that place. Our description of it is derived from the *Scientific American*. The principle of this invention consists in charging successively, by a battery, different rows of magnets on a revolving cylinder, so that the magnets shall lift magnetic ore from an endless web as it passes under the cylinder; and so also when the ore is lifted up a short distance, the electric connection shall be broken with the magnets, and the ore then drop from them into a trough, and be discharged into a proper receptacle.

A A is the frame; B is a pulley, by which the cam-shaft, C, is revolved. This shaft by the cam, C, shakes the hopper, F, so as to spread the ore evenly across the web, H. This is done by having a hook at that catches the upper edge of C, and is made, from the shape of the cam, to traverse across the web, and spread the ore equally on the web. D is the revolving magnetic cylinder, driven by band and pulleys, O, N, P. L is the trough, into which the ore is discharged from the cylinder. XX are mercury troughs, the one charged positively, and the other negatively, from the battery, by the wires MM. The magnets are fixed on the revolving cylinder, and round with copper wire, the one positive and the other negative. These wires are carried from the magnet to another across the row, and brought out at the axle of the cylinder, to form a circular fan of the points of the wires, so that as the cylinder revolves, and these wires dip into the charged mercury troughs, the rows of magnets are charged and released alternately, to lift the ore from the dross, and deposit it in the receiving trough.

K is the hook shaft, or bar, which is made to shake the hopper, F, as already described. H is the end of the web, or apron, carrying the ore forward to the magnets on the cylinder, D. The magnetic cylinder revolves to meet the ore as it comes forward on the web, and not in a contrary direction, as might be inferred. T T are the magnets. M represents the wires from the battery. The large cylinder is revolved by a broad band from the other side passing over a large pulley on the shaft of D, the magnetic cylinder. E represents the copper wires that are wound around the magnets, showing the manner in which they are formed on the outside of the axle, as to dip into the charged mercury troughs and be revolved by the rise out of the troughs, the electric current is broken by the magnets discharged. As the cylinder is made of wood, and non-conducting, and to keep the wires from the axle of the axle) is boxed up with wood and wires turned under it.

Fig. 3 shows the manner in which the magnets are arranged on the cylinder. D, is the cylinder; T T, the magnets; Y Y, the troughs; and X, the trough, or vessel, of quicksilver. The cylinder is about 30 inches in diameter, and the magnets are about 1/2 inch thick, with four polar points, the negative and the positive magnet. There is a space of about 1/4 of an inch between the magnets, and a large one has had 10 magnets arranged in 30 rows on the cylinder.

It will be observed, that the wires are alternately vertical and horizontal, in the direction of the polar currents. One wire is now raised, and the other is lowered, in the mercury, but one-fourth of all the time. The wires are raised and lowered at the same time, as that number touch the magnet on the same side of the cylinder; but the magnets are charged alternately, so that the wires are raised and lowered successively in rows. The ore is carried forward by a screw, and is discharged by a leather apron; and the magnet cylinder, by revolving in the opposite direction to the screw, discharges the ore by the apron, lifts the ore, while the dress is being raised, and discharges it by the apron while passing over the roller.

This machine is not an untried one. It has been running in operation at Plattsburg for some time, and is associated with hornblende, no other process of which, it appears, compare with this.—*Mechanics' Magazine*.

IMPROVEMENTS IN RAILWAY WHEELS, TURN-TABLE
 WHEELS, &c., of Edgbaston, and John Ramsbottom, of Longsight, have just obtained a patent for some improvements in the construction of railway wheels, and in railway turn-tables, which latter is applicable to certain shafts or axles driven by steam, or by a railway wheel is constructed with spokes of angle iron, in the form of triangles, and arranged in two eccentric circles with

triangles, and arranged in two eccentric circles with the ends which form the apices placed together. The ends, and the bases clamped together. The tire, which is a conference, with a shallow dovetail groove, is then shrunk on to draw each pair of spokes together, and the tire is made of pieces of metal, which are driven into the spaces between the spokes, and there held fast by rivetting or upsetting. The top and bottom plates, which are suitably supported on the sides, are constructed with a number of eccentric and corresponding holes on opposite faces. Spheres, cones, or cylinders, are placed in the grooves of the lower plate, and serve as bearings to the tire.

of the lower plate, and serve as bearings to the rollers. The number of spheres, cones, or cylinders, in the outer to the inner one in a greater proportion to the differences of their diameters. The edges of the table, to shield the interior from ballast, and to support the permanent way. The bottom plate is perforated with holes to receive the spikes for bolting it to the sleepers, and the surface water. The patentees describe several modifications, such as forming the bottom plate of concentric grooves, sleepers or suitable foundation, and constructing the rollers thinner than together: also making the top plate, in some cases, of a single piece.

ing them together; also making the top plate in segments and fitting them together. Sometimes the grooves are made in rows of spheres. Lastly, this invention consists in the following principle of construction to support shafts or a pulley is subject to great strain in the direction of their length. The shoulders, fitted on the face, with concentric grooves. The shoulders are fixed collars of hard metal, having on the shoulders a like number of corresponding concentric grooves, cones, or cylinders, are placed in the spaces formed by the shoulders and the collars, and serve to relieve the shaft from the strain. One of the shafts is fitted with shoulders

heel-piece, are furnished with a number of corresponding grooves into the spaces so formed are placed the spheres, &c. The grooves of the heel-piece are filled with some substance to increase the friction.—*Claim:* The improved construction of the arrangement and combination of cones, cylinders, spheres, &c. for the purposes before described.—*Mechanics.*

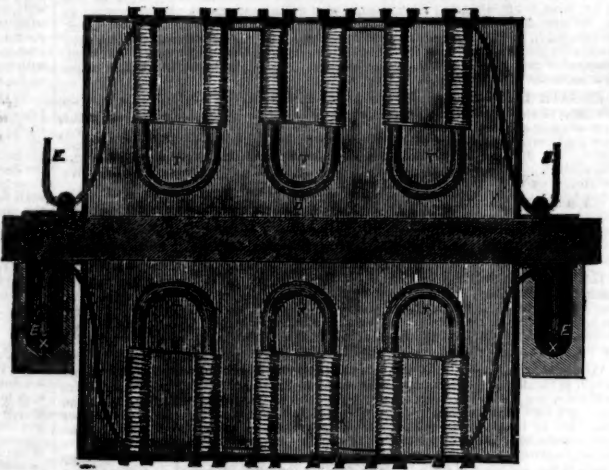
THE GREAT NORTHERN.—The works on this line, south of the city, are proceeding very favourably. There is now a permanent track from Bawtry, which is daily traversed by the bal-

THE CHURNET VALLEY RAILWAY.—There is a wooden viaduct, about 500 yards long, very durable as the material of which it is constructed is oak, and to have the line to the junction with the Manchester and Bolton Railway ready by September, for the Doncaster and Great Northern Railway Co. The directors declare there will be no difficulty in doing this.

THE NORTH STAFFORDSHIRE RAILWAY.—The Churnet Valley section of this company's railway is opened, and gives a direct communication between Macclesfield and Liverpool, to Derby, via Warrington.

THE DANGEROUS LIVER COMPLAINT EFFECTUALLY CURED.—Extract of a letter from Mr. W. Rogers, blacksmith, Beveridge, to the proprietor of the "Lancet," dated 18th March 1884.

Extract of a letter from Mr. W. Rogers, blacksmith, Raven-
 south Wales, to Mr. J. K. Heyden, agent for Holloway's Ex-
 periment, dated Jan. 17, 1849.—"Sir,—About 18 months since, I
 suffered from a severe complaint, for which I consulted the two medical men
 who attended me, but derived no benefit from their treatment, and at last they gave me
 up as incurable. I then commenced taking Holloway's invaluable
 medicine, and after about seven weeks, and I am now completely cured. I
 have therefore no objection to giving publicity to the case."—Sold by all druggists, and at
 the Dispensary, 244, Strand, London.



SELF-GENERATING GAS LAMPS.—An action (Holliday v. Fawcett) has been brought, in the Court of Queen's Bench, to try the validity of the patent taken out by Mr. Holliday, of Huddersfield, for improvement in self-generating gas lamps, which it was alleged had been infringed. From evidence it appeared that though several patents had been taken out for portable lamps, to burn gaseous or spirituous liquids without the use of wicks, none of them had succeeded, so as to be brought into extensive use, until the improvements introduced by plaintiff had removed the former defects; and that since those im-

movements had benefitted the sale had been very great; and the utility of the new lamp was so manifest that many parties had commenced to make them without due license from the patentee, and, amongst the foremost, Mr. Fawcett, son of Huddersfield, whose son had been in plaintiff's employ during the time the models of different kinds of burners patented had been made for the purpose of being set forth in the specification. In support of the plaintiff's case, Mr. Carmichael, stated that he had been much consulted on the manufacture of lamps for burning various matters, and amongst others, for burning naphtha. He was well acquainted with all the different forms of the vapour lamp; and was aware that until plaintiff's lamp was introduced, none of them had been

successful to any extent. He was of opinion that the peculiar forms of the plaintiff's burners were new and useful. Evidence of the extensive sale of the plaintiff's lamp was also given, and the lamp itself exhibited in court in full operation, producing, as Mr. Carmichael said, a very splendid flame, resembling that of a gas flame or burner. It was also shown that the defendant had, in the opinion of the witnesses examined, infringed upon plaintiff's patent; and in support of their testimony sections of each burner were produced. Counsel in setting forth plaintiff's case, stated that the action was brought to assert the right of plaintiff, and not with a view of obtaining damages. The defence was, that the patented improvements were not new; and in support of this plea evidence

MADE OF GAS IN MANCHESTER.—There was made last year in Manchester 0,000,000 cubic feet of gas, and in the depth of winter it required 400 retorts full work, and an annual consumption of Cannel coal of 25,000 tons. The early increase in the consumption seems to go on steadily, and with each successive reduction in price, it seems to advance in a still greater measure.

A BRIDGE BUILT IN A WEEK.—The erection of a large railway bridge, 75

is 6 inches long, and 30 feet high, in a week, may be regarded by some as an impossibility, but the feat has been all but accomplished on the Leeds and Thirsk railway. Messrs. Garaside and Parker, sub-contractors, laid the foundation of the bridge of the dimensions specified, behind the Retreat, at Armley, near Leeds, on Monday, June 25; on the evening of the following day the abutments were raised to the springing, and the centres placed for supporting the stones of the arch during its construction. On the Wednesday evening the key stones were raised. On the following Friday the masonry on both sides was raised to the level of the cornices; and on the next day a roadway was made across the bridge, which would have been completed but for some little delay in the sup-

LEEDS AND THIRSK RAILWAY.—This line (which was opened for traffic on Wednesday last) is about 40 miles in length, 10 of which were opened in June, 1848. It forms a junction with the Leeds and Dewsbury line at Leeds, and passes near Knarborough, Ripley, Boroughbridge, and Ripon to Thirsk, where it terminates by a junction with the Great North of England Railway. The distance between Leeds and Thirsk by this route will, it is said, be about 14 miles shorter than by the existing route. There are several heavy works on the line, consisting of cuttings, embankments, viaducts, and tunnels. The Brampton tunnel on the line is a work of great magnitude; it is 3763 yards in length

... miles), and is ventilated by four oval shafts, 40 feet by 80 feet, varying in depth from 70 to 880 feet. The strata met with in sinking the shafts consisted of blue shale and sandstone, and considerable difficulty was experienced in promoting the work from the vast quantity of water which was met with in the strata, and had to be pumped out before the drift way was completed. It was intended to afford every facility to the public by the issue of day and season tickets at a low charge, with the view to induce persons to travel on the line.

I. Whereas numerous accidents have arisen in the working of mines and collieries in the United Kingdom, and it may tend to the prevention of such accidents to secure a due inspection of such mines and collieries by the authority of Parliament: be it therefore enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords spiritual and temporal, and Commons, in this present Parliament assembled, and by the authority of the same, that it shall be lawful for her Majesty's Secretary of State for the Home Department for the time being, from time to time, as he may think necessary, to appoint persons as inspectors of mines and collieries, and, at his pleasure, to remove or suspend and nominate in their stead, provided that no greater number than three inspectors of mines and collieries, shall be at any one time appointed or in office under this Act.

ence under this Act, that one of the said inspectors shall be resident in London, and shall be called the resident or head inspector, and the other inspectors shall make quarterly reports to him of the state and progress of their inspection within their respective districts, and an annual report shall be made by said resident or head inspector to the Secretary of State for the Home Department, who shall lay same before both Houses of Parliament.

III. And be it enacted, that her said Majesty's principal Secretary of State for the Home Department, or the head inspector, with the approval of such secretary, may from time to time make regulations for regulating the duties of the several inspectors and of the clerks and servants employed in the execution of this Act, so that they be not contrary to the intent thereof, and that the said regulations, when made and approved shall be binding on the said inspectors, clerks and servants aforesaid.

insiding on the last mine or colliery, work, and ser'ants respectively.

The undersigned hereby authorises, and empowers, the said inspectors, or either of them, to examine every mine or colliery within their respective districts, when, and as often as they think necessary, during the working of the same, and the works, buildings, and machinery belonging thereto, at any reasonable time, and to make inquiry into and touching the state and condition of such mines or colliery, and the works, buildings, and machinery belonging thereto, and the ventilation of and such mine or colliery, and the safety of the same, and the means of preventing accidents, and the means of remedying any defect connected with or relating to the safety of such mine or colliery, or tending to produce bodily injury to any person or persons employed or working therein or connected therewith; and such inspectors are hereby authorised and empowered to examine upon oath any person or persons upon or concerning any matter or thing relating to or connected

with every such mine or colliery, or works or machinery belonging thereto, and to take or call to their aid in such examinations and inquiry such persons as they may choose, and to inspect and inquire into any person or persons who may be guilty of any such examination and inquiry, and to administer to such person or persons an oath; and if they said inspectors or any of them find or observe any part of any such mine or colliery, works, buildings, machinery, aircourses, airdoors, waterways, drains, pits, levels, shafts, or other matter or thing in or connected with the said mine or colliery, or the mode of working or lighting the said mine or colliery, to be dangerous or defective, such inspector or inspectors shall forthwith make a report in writing of the same to the owner or his agent, and such notice may be in the form given in the schedule to this Act annexed, or in any other form suitable to the case, and shall serve the same upon the said owner of the said mine or colliery, or his agent, and suggest to the said owner or manager to alter, repair, or improve the said mine, works, or machinery, or to do or perform such matter or thing connected with or relating to such mine, works, or machinery, as the said in-

V. And be it enacted, that within three months after the passing of this Act, and once in every year thereafter, such three months, every owner of a mine or colliery in work shall deliver "To the Office of Inspectors of Mines and Collieries, London," a written notice, containing his own name and address, the name of the mine or colliery, the place, township, parish, and county where it is situated, and the name of the firm under which the said mine or colliery is worked or carried on, together with a map or plan of the said mine or colliery, works and machinery, showing the length and width of the main and subordinate ways and other roads and other works and things in and connected with the said mine or colliery, clearly and accurately drawn and delineated on a scale of not less than four chains to an inch; and every owner of any mine or colliery who shall not be working it at the time of the passing of this Act,

but who shall commence working it or raising or getting coal therefrom after the passing of this Act, whether such working in such mine or colliery shall be commenced for the first time, or whether it be renewed after such working shall have ceased, shall send such notice to the nearest justice of the peace for the district in which the mine or colliery shall so have commenced working the said mine or colliery, and the same once in every three months after the lapse of the said three months.

VI. And be it enacted, that in case any owner of a mine or colliery, or agent, manager, or servant of such owner, or any other person, shall disturb or impede or interfere with any person lawfully working any mine or colliery, or shall contravene or disobey the provisions of this Act, or any regulations or orders made thereunder or in pursuance thereof, it shall be lawful for any magistrate to summon such persons before him, and all witnesses who may be re-

VII. And it be enacted, that in order to defray the expenses incurred under, by, or in pursuance of this Act, and the salaries of the respective officers, inspectors, clerks, agents, and others appointed under and in pursuance of this Act, it shall be lawful that a rate, to be levied and collected in the same manner as the Poor's Rate is levied and collected, and to be applied to the interest of the said loan, be levied on all ratings and collections rated to the poor.

VIII. And be it enacted, that her Majesty's Secretary of State for the Home Department shall direct such salaries and emoluments to be paid to the said inspectors, and for the discharge of the said head office in London, as he shall think fit; and that in the said annual report to such Secretary of State, and to be laid before him, there shall be a statement of the said salaries and emoluments, and of the said disbursements, and of the provisions of this Act; and it shall be lawful for such Secretary of State for the time being to make such necessary alterations and regulations in respect thereto as to him shall seem fit.

IX. And be it enacted, that in all cases in which a Justice of the Peace is required or empowered to do anything under this Act, or who is named herein, a Burgh magistrate

shall have within his jurisdiction the same powers and duties as are herein given to such sheriff, and shall exercise the same in Scotland; but no complaint preferred for any offence against this Act committed in a mine or colliery shall be heard or pursued by the sheriff, unless the same be preferred by the owner of the mine or colliery, or being the father, son, or brother of the owner of the mine or colliery, in which the offence set forth in the complaint shall have been committed.

X. And it be enacted, that the word "owner" of a mine or colliery shall be taken to mean the immediate proprietor or lessee or occupier thereof, and all persons working any mine or colliery, and any individual or partnership, or society, or as shareholders, or as partners, or all partners, and companies so working such mine or colliery or any part thereof; and the word "agent" shall be taken to mean any person receiving a salary, wages, payment, or remuneration for any description of service or work performed in a

mine or colliery; and that the word "mine" or "colliery" shall be taken to mean a coal mine, or a mine worked for the purpose of getting and raising coal therefrom, and shall not include any other kind of mine; and the word "month" shall be taken to mean Calendar month.

XI. And be it enacted, that this Act shall not extend to Ireland.

XII. And be it enacted, that this Act may be amended or repealed by any Act to be passed in this session of Parliament.

The form of notice to be given is thus set forth in the schedule:—

To _____ owner of a _____ mine or colliery situated in _____ the parish of _____ and county of _____. I hereby give you notice, that your mine or colliery appears to me to be dangerous, and likely to cause bodily injury to the workers employed therein,

this respect, and I am of opinion, that any of these are necessary and essential
 made, to secure the due and proper working of each mine separately.
 [The words and clause printed in *Italics* are proposed to be inserted in the Committee.]

MINES AND COLLIERIES INSPECTION BILL.
 In the House of Commons, on Tuesday, in answer to a question put by Mr. FOWLES,
 G. GARY said, that he believed was the general opinion of the House that the fur-
 progress of the bill introduced by Mr. Duncombe, providing for the inspection of
 mines and collieries, should be postponed until next session, in order that the House might
 ve the benefit of the reports of the inspectors appointed by the committee. He hoped

At a later period of the evening, Mr. WYLD rose to move the second reading of his bill a copy of which is given above. He (Mr. Wyld) said the previous bill had been withdrawn in consequence of objections to certain principles embraced by it, entertained by the Secretary of State for the Home Department, and other members of the Government. He had not anticipated that it had been brought in, confined entirely to the principle of inspection, he was surprised to hear that it was the intention of the right hon. gentleman to oppose it. Year by year these accidents were increasing. In the present year the sacrifice of life was 35 per cent. more than it was last; and if the Secretary of State for the Home Department postponed this measure to another year, on him would rest the

SP. GEORGE. GAEY thought that in the course of the full discussion of this measure the other day, the House had expressed an opinion that a measure on this subject should not be introduced without the sanction of a Committee. He had been appointed by the House, and he who were now fully investigating the subject; two gentlemen had been appointed to inspect the principal coal districts in England, and he had been under the impression that legislation should be deferred until after those gentlemen had made their report. He could not quite admit that this measure was unnumbered with difficulty; and he certainly was not disposed to acquiesce in the appointment of a Committee in London, and to require the Government to come to the country, or could he assent to the proposal that the owners of mines should be compelled to furnish plans and sections of their mines, or that a rate of 3d. a should be levied to defray the expense of this costly machinery. If the hon. Member

referred in his intention of pressing on this bill, he should feel compelled to move that he read a second time that day three months.

Mr. AGNEW said, that he had recommended the hon. Member for Finbury, on a former occasion, to withdraw a bill on this subject, on the understanding that the House would affirm the principle of a lighter and more lenient mode of dealing with the matter. He affirmed the principle of a lighter and more lenient mode of dealing with the matter. The motion was agreed to, and the bill was read a second time. Since his motion had been moved in the House, he had received letters from all quarters, praying protection against the recurrence of these accidents in coal mines.

Mr. BERNAL was of opinion, that, as the Government had pledged themselves to legislate on this subject, it would be better to leave the matter in their hands.

Mr. DUNCAN recommended the hon. Member to withdraw the bill. The motion was agreed to, and the bill was read a second time. The motion was agreed to, and the bill was read a second time.

It will be seen that some difficulty in the appeal now made to him, to make a statement on this subject, the Government would have been unable to overcome. The Government might have said that, really, they certainly have not a practical knowledge of the matter they were about to propose upon. The whole of the north of England was unanimous in the expression of disapproval of the appointments, for the gentlemen elected, although they might be unskilled in the management of the surface of the earth, certainly had no experience as colliery viewfinders. Importance of the subject could not be denied. The risk of the loss of life to which the men were exposed in working in a tunnel was much greater than that of the loss of life when they engaged in the battle-field, or when mounting a battery. This question had been in abeyance since 1843, and as he thought that the time had arrived when no far-decision should be permitted, he must persist in adhering to his resolution of moving a second reading of the bill.

the gallery was then cleared for a division, but none took place, the motion having been negatived without a division.

Statement of Receipts and Expenditure, from April, 1848, to June, 1849.			
1848—	To equivalent of deposit of 5 <i>l.</i> per share on 400 shares granted to lessee	£3000	0 0
	Deposit of 5 <i>l.</i> per share on 110 shares	550	0 0
	Do to 2 <i>l.</i> per share on 10 shares	20	0 0
	Sale of 1 ton of ore at 10 <i>l.</i>	10	0 0— 590 0 0
	Deficit due to purser		340 5 0
	Total	£2930	5 0
	By 400 shares granted to lessee, <i>as per contra</i>	£2000	0 0
	Cost-sheet, office rent, travelling expenses, &c.	£794	15 0
	Stationery, printing, &c.	135	10 0— 930 5 0
	Total	£2930	5 0
1849—	Assets—To bills at 4 and 6 months for 120 shares, sold at 4 <i>l.</i> per sh.	£ 480	0 0
	350 shares unsold, equal to	1800	0 0
	Deposits due on the 13 <i>l.</i> shares	20	0 0

SOUTH WHEEL JOSHIAH MINING COMPANY.

A meeting of proprietors was held, on the 3d July, at the Queen's Head Inn, Tavistock.

The accounts and vouchers to end of April were examined and passed, showing a balance in favour of mine, 10l. 8s. 10d. A call of 10s. per share was made. The following report, from Capt. John Hambly, was read to the meeting:—

July 2.—I have much pleasure in presenting you with a report of the above mine, and in doing so would congratulate the proprietors on the great prospect of success in the same. Since our last meeting, we have driven the adit end on the Wheel Jack Thomas lode about 20 fms., and have gone through two cross-courses; the lode is very regular, but in its appearance changeable, and is now about 3 ft. wide, and at all times carrying a lookan on the wall, and is composed of spar, gossan, soft prian, mundie, and copper, stones of which are on the table before you, and finer specimens of black ore and gossan can be seen or equalled in but few new mines at the present depth. We are now under the surface about 12 fms., therefore cannot expect to have more cheering prospect than we have at present, until we have driven further in the hill, and then, from the present indications, I think there can be no doubt of having a good lode. In the south ground we have, by shod pits, found two tin lodes and a copper lode; but, whether this is the Hawkmoor copper lode, or not, I cannot say; it is further south than where I expected to cut the Hawkmoor lode, and I rather think this is the lode in the Cletter's adit, which gives a very fine appearance there, with copper in it; in the shod pit it is about 2½ ft. wide, but not having opened any ground, cannot say much about what it is likely to be. One of the tin lodes above-named, which we have discovered is about 2½ ft. wide in granite, producing good samples of tin; but further trial must be made on the back, &c., before saying much about its value, and from of a large pile saved for the stamps, it has been judged worth 6 cwt. of tin per 100 sacks, and I think this lode is likely to pay well for exploring. There are several other lodes in the set yet to be cut, and, from those rich shod stones of tin found about the surface, there must be a good lode near the spot, and should recommend the cutting of all the lodes in the set as soon as possible, and then operate on those promising to be most productive.

WHEEL LAWRENCE MINING COMPANY.

A special general meeting of shareholders was held on Friday, the 13th inst. at the offices of the company, Winchester-buildings, for the purpose of the ordinary business, and particularly to receive Capt. James, who had arrived from the mines near Exeter, with important information.

The report, containing an account of the primary operations, was read. The adit driving from the banks of the river along the course of the great north and south lead lodes into the hills, to intersect the east and west copper lodes, was described, and specimens of its produce, in the shape of fine stones of gossan, mundie, crystallized quartz, lead, &c., were placed on the table, and were deemed very satisfactory, as indications on the great north and south lode, which has proved so productive in contiguous mines. The prospects of economically working this set were satisfactorily proved; and the meeting separated, after a vote of thanks to Mr. FOSTER, the chairman.

GALVANISED IRON COMPANY.

The adjourned general meeting of this company was held on Thursday, the 12th inst., at the London Tavern, Bishopsgate-street, and was numerously attended. A plan for the final winding-up of the company was laid before the meeting, and unanimously approved of. It stated that the Welsh property had been disposed of; and that negotiations were also pending for the disposal of the company's property in Staffordshire. Arrangements were also commenced for transferring the galvanised iron business to a certain portion of the shareholders.

We understand that, from some of the most influential of the body having signified their intention of joining the new concern, the capabilities of this most important invention are likely to be brought more prominently under the notice of the public.

After a vote of thanks to the chairman, and an expression of confidence in the board of directors, the meeting separated.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

CALLINGTON.—There is an improvement in the 70 east, on Kelly Bray lode which is looking very promising indeed.

RHOWDYDOL AND BACHEDON MINES.—There are four levels driving here—the adit, 80 fms. from surface; one, 10 fms. deeper; and another, 17 fms. deeper; and another deep adit, called Smithy level, coming under the whole at a depth of 77 fms. from surface. There are besides several stopes in the different levels. The ends of these four levels driving are ore. The Smithy level has been two years driving; and we have made a great discovery of lead in this level during the last few days; the lode is 5 ft. wide—20 in. of which is very good ore; the other part is full of strings of lead, and will yield nearly two tons to the fathom; but it is expected that this is only the commencement of a great course of ore, as they have opened on it in the levels above for 60 fms. in length. Besides the four levels driving, there are seven stopes raising ore; and in a very short time they expect to put the mine down as a regular dividend-paying concern.

TAMAR SILVER-LEAD.—There have been sampled here 109 tons of ore (15 tons 19 cwt. of which are from the north mine) for sale on the 17th inst. Should this sell as well as that for May, it will leave a profit for June of about 780l.

EAST CRODNDALE.—In our last week's Journal we mentioned a report that we had heard of the returns from this mine not being commensurate with the estimates. We are sorry to state, from accurate and authentic information, which we have received from parties conversant with the property, that this is fully confirmed. It appears that, after driving the deep adit, the company, in little more than a year, from a shallow depth, a few fathoms below the surface, have raised tin to the value of about 2000l. sterling. From the reports which they received, they were led to imagine that a greater quantity had come to grass than has actually been the case. Acting upon the exaggerated reports and erroneous statements which they received, they were induced to purchase a steam-engine, and other necessary machinery to erect on the mines; at the same time, they anticipated from the surplus to pay a dividend. Unfortunately, they have since discovered that the tin raised, though it is sufficient for the working expenses, will not liquidate the demands on the adventurers for the machinery, consequently a fresh call of 10s. per share will be necessary. As far as the mineral capabilities of the mine are concerned, there is but one opinion—that it is a good property, and, if fairly and honestly worked, would return a good interest on the capital embarked. As far as we can learn, we understand that the reports which have been issued have given more cheering prospects than circumstances would warrant. Whether this has arisen from ignorance, or has been wilfully done, we are at a loss to conjecture. We had hoped, from the various exposures that have, on different occasions, occurred, that we should not have cause to allude to transactions which, at the same time they throw great discredit on the individuals concerned, have a blighting influence on the property entrusted to their charge, and inflict incalculable evil on the mining community at large. Confidence once destroyed in the public mind is difficult to be regained, and any exaggerated report, or inflated estimate, though it may give a delusive hope at the time it is ushered forth to the world, sooner or later recoils on the individual propagating it with disgrace and discomfiture. The present depression of railway property, and the principal causes which have led to it, we should have thought would have been a sufficient warning to any one possessed of common sense. The committee have secured the services of a new agent; we trust that under his management the mine will be developed with that energy which it deserves, and that he will carefully avoid those errors which have given so much and such general dissatisfaction. We make no further comments, but we think that, had more alacrity been shown by the general management, many of the evils which they now so justly complain of would have been avoided.

WHEEL BRAY COPPER MINE.—With a prospectus of this mining company we have received the information, that immediately previous to the panic occasioned by the railway mania, this set was in the hands of a company of nine individuals; and one of them wishing to relinquish his interest, and his friends not wishing to press him, and other circumstances, the mine was suspended, with 2000l. worth of ore in sight. There are three sets very extensive, situated in the parish of Altarnun, and held on leases for 21 years, at moderate dues, and it is the general opinion of numerous mine agents that the spot is one of the richest for copper in the county. About 13,000l. have been expended on the mine, two shafts have been sunk respectively to 56 and 40 fms. each, and 300 fms. driven on the course of the lodes, leaving the ore in sight mentioned above. Many miners who know the mine are anxious to commence on tribute. There is an excellent water-wheel 36 ft. diameter, 4 ft. abreast, and shops, counting-houses, dressing-floors, &c., are all in good condition, and ready for working. It will, however, be necessary to erect a steam-engine, for the full and continuous development of the property, and it is desired to divide the 64 original shares into 1024, on which 1l. per share is proposed to be paid, and it is fully expected this sum will put the mine in profitable work. There is a large quantity of every necessary material on the property, and the granite is cut, and on the ground ready for building the engine-house. From the high standing of the present holders, whose names are given at the head of the prospectus, there can be no doubt of the legitimate character of this adventure; while there is every reason to believe, from all the evidence adduced, inspection, and general indications, that the speculation will prove highly profitable.

WORTH OF IMITATION.—At the Glamorganshire Quarter Sessions, held last week at Neath, the Clerk of the Peace was ordered to return all coroners' bills in which the causes of death is not fully set out—*ex gr.*, instead of "accidental death," the words "killed by a fall of earth," &c., are to be henceforth substituted.

FALL OF AN AEROLITE.—The *Press* of Sunday records the fall of an aerolite of five kilograms in weight, at Trigubnes, near Montargis, at the close of a violent storm. It was composed of crystal, sulphur, and a substance resembling plaster.

FOREIGN INTELLIGENCE.

The accounts which have reached us this week from Germany speak of the disastrous effects which the Danish blockade is entailing on all classes of the community. The principal part of the merchants of Hamburg are paying their labourers their wages, though they have no work to employ them, fearful of a general rise should they stop their payments. At the Elbe Copper-Works the proprietors are building two new furnaces, and renovating the eight which they already possess. The workmen are employed in making floors for the reception of coals and slag banks, the establishment not having had any supply of ores for some time. In Saxony, owing to the revolution, mining industry has received a severe check. The mines and smelting-works of the Government were suspended during the *émigré* at Dresden, but they have since been resumed, though not with their wonted activity. Quicksilver from the mines of Idria had been offered to the Amalgamation Works at Freiberg, at the rate of one Saxon thaler and ten groschen, delivered duty free. Notwithstanding the lowliness of the offer it was not accepted. Trade and commerce, both there and in Prussia, had been severely paralysed by the late events. Several Saxon mining officers, who have been compromised in the late political movements, have been obliged to fly the country. The ordinary tribunals have been suspended, and those concerned in the late insurrection are subject to be tried by court martial.

MINING IN UPPER CANADA.—We understand that a company of Canadians, who have been for some time working the Bruce Copper Mines, in the province of Upper Canada, intend to establish smelting works to reduce their produce on the spot. Parties are now in England, preparatory to making the necessary arrangements.

CALIFORNIA.—A letter from Philadelphia, dated June 27, says:—"We have received here an immense number of letters from San Francisco, in most of which the gold regions are described as teeming with untold wealth. This intelligence, and the large amount of gold dust brought by the *Crescent City*, have renewed the California fever in all its original fervor, and it is not likely for some time to diminish, as, at the moment of writing this letter, I learn that the brig *Ida* has arrived at this port with 14 passengers from Chagres, *via* Kingston, and gold dust and lumps worth \$300,000! The amounts which have reached this country and the consignments on the way from California, are reported at \$4,000,000. Digging graves is described as being light work in comparison with the labour of digging for gold in California! So it appears that the way to wealth is strewn with thorns. The diggers are sometimes up to their knees in water—sometimes parched and maddened with a broiling sun—anon shaking with ague or scorched with fever—fighting with Indians, or weak and exhausted for want of food. Such are the accompaniments of success at the mines. On returning to San Francisco, gambling, drinking, and exposure, produce sad havoc among the reckless many—while the prudent few, who patiently submitted to toil and privation, realise tolerable fortunes. But a period—a crisis—is threatened in California. Foreigners, and particularly Mexicans and South Americans, are pouring into California, and already they far outnumber the Americans. The latter contend that foreigners have no right whatever to the mines, and that they must be expelled at all hazards. This threat appears also, from the tone of our advice, to be mingled with an apprehension of the Spanish-American races attacking the Americans, and endeavouring to secure the entire El Dorado for themselves. "Native American Associations" have banded together, all well armed and in process of military training, and at no distant period a collision is expected. Several leading journals appeal to the United States Government to send out a sufficient force to preserve order, and to save California from becoming a scene of carnage, massacre, and murder. We have other painful intelligence relating to California. Not only have the emigrants across the continent been thinned off by cholera—not only have many returned, overcome with fatigue, and appalled with the excessive heat, the weariness and the dangers of the prairies—but the Indians have assembled in great numbers, for the purpose of attacking the emigrants who journey through the Rio Grande, the Mexican, and portions of the Texan territory. From Chihuahua we learn that a party had been attacked by Indians, and more than half killed. Mr. Thatcher had lost several of his party, and killed 25 Mexicans in repulsing an attack. One party of 35 California emigrants, and another of 28, have been actually destroyed by about 500 Indians; and a magnetic dispatch of yesterday, from New Orleans, states that in all, "500 emigrants to California have been killed by the Indians in Mexico." At the mines, five Americans and 35 Indians fell in a conflict on the 18th of April. Thus is the gold of California baptised in blood!"

Official documents have been received at New York, from the collector of customs at San Francisco, by which it appears that 2443 emigrants had arrived there by sea between the 1st October, 1848, and the 31st March, 1849. The amount of gold imported was \$1,089,281, and the amount exported during the same period was \$2,868,712; the value of goods entered inwards was \$1,089,801; so that if the goods and gold imported be added together, it will be seen that there has not yet been any great gain in trading with California.

VENEZUELA.—Some New York papers, received by the *Cambria*, contain further particulars of the new gold mines alleged to have been discovered in Venezuela on the line of the Orinoco River, about a day's journey from the city of Bolivar. These particulars are furnished by one of the parties connected with the American steamer, *Venezuela*, which is now making regular trips from the port of Spain to Bolivar. They represent the mines to be of great richness both as to extent and quality. In another column will be found a letter on the subject from a correspondent.

New Patents.

SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

Specification of patent granted to Michael Loon, Treasurer, Cornwall, engineer, for improvements in the manufacture of fuses.—A strip of calico, or other suitable elastic fabric, is laid from a reel underneath a hopper filled with gunpowder, and is caused to assume the shape of a trough, which, with the necessary quantity of gunpowder, is drawn under weighted projecting pieces, and through a hollow axis, which have the effect of bending the edges of the calico over, so as to complete the tube. Upon this axis is a collar, which supports a rotary plate, and carries an adjustable sliding piece through which the tube is led. The rotary plate is furnished with a convenient number of bobbins, having yarns or threads wound upon them. The sliding plate is perforated with holes, and the threads are passed through them, and attached to the tube. The plate and bobbins are made to revolve, and the tube drawn out, whereby the threads or yarns are wound round it. The tube, as it is drawn out, is wound upon a drum. Instead of threads or yarns, it is proposed to use a tape. When the tube has been thus far completed, it is coated with some waterproofing material as usual.

Claim.—Manufacturing fuzes for mining and other purposes by means of calico, or other suitable flexible fabric or material, which is progressively made to assume the form of the internal tube.

John Coope Hadden, 29, Bloomsbury-square, C.E., for an improvement or improvements in railway wheels.—This invention consists—1. In making the spokes of wrought iron bars, which have their nave ends bent into the form of three sides of an equilateral polygon, so that they may overlap one another. These ends may be placed radially or tangentially to the centre, and welded to one or between two cheeks, and are cut away from the centre hole of the cheek, so as not to come in contact with the axle. These spokes may either be of the L or T form, and are bent into the desired shape at the nave end by means of suitably shaped blocks.—2. The tyre of the wheel is made of less diameter at the part next to the flange than in the centre, in order that the tread may be on the centre of the line of rails.—3. To enable the flanged wheel to run on turnways, a ring with a plain periphery and a portion of its inner circumference chalked down to receive the flange is slunk on. Claim.—The three several modes of constructing railway wheels.

William Rowe, New Wharf, Whitefriars, London, carpenter and joiner, for certain improvements in the mode of nailing or combining pipes or lengths of pipes, tubes, or channels formed of glass, earthenware, or other similar material.—The pipes are constructed near their points of junction with inside or outside grooves or projections, and are united by means of metal clips or clamps, furnished with corresponding grooves or projections. Rings of some suitable elastic material are interposed between the points of contact of the tubes, to allow of their being brought close together. Or, in order to dispense with the use of the elastic rings, the external diameters of the ends of some of the tubes are made smaller than the ends of the others, in order that they may fit into one another, and are furnished with ears whereby they are bolted together.

Claims.—The uniting of pipes: 1. By means of grooves on their exterior circumferences and indented metal clips, in combination with elastic rings.—2. By means of projections on their exterior circumferences and extended metal clips, in combination with elastic rings.—3. By means of projections on their internal diameters and metal clips, in combination with elastic rings.—4. By means of the peculiar construction which allows of the use of the elastic rings being dispensed with; and 5. Permits of their being bolted together.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

R. Garrett, Leiston Works, Suffolk, agricultural implement maker, for improvements in horse-hoes, pugmills, drilling and thrashing machinery, and in steam-engines and boilers for agricultural purposes.
T. S. Summers, Cornwall-terrace, Lee, Kent, lighterman, for certain improvements in fastenings for mouths of sacks and bags.
W. Laurie, Carlton-place, Glasgow, merchant, for improvements in means or apparatus to be employed for the preservation of life and property, such improvements, or parts thereof, being applicable to various articles of furniture, dress, and travelling apparatus.
J. Goodier, Mode Wheel Mills, near Manchester, miller, for certain improvements in mills for grinding wheat and other grain.
G. A. Robinson, gentleman, Long Melford, Suffolk, and R. E. Lee, gentleman, Glasgow, for certain improvements in the manufacture of bread, and in the machinery and apparatus to be used therein; and also improvements in the regulation of ovens and furnaces, part of which improvements are also applicable to other similar useful purposes.
E. I. Fuller, Margaret-street, Cavendish-square, carriage builder, and G. Tabernacle, Mount-row, Westminster-road, coach foundry, for certain improvements in metallic springs for carriages.
DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

C. Hart, Wantage, Berks, plough-head.
T. Evans, Southampton-street, Strand, fastening for collars, stocks, shirts, and fronts.
W. Goode, Birmingham, self-feeding apparatus for nail machine.
J. Smith, Corven, near Wolverhampton, feeding apparatus for mills.
E. Burgess, St. John-street-road, Clerkenwell, fire indicator and alarm.
G. Harbrow, Holborn-lane, shirt collar.
Isaacs, Jones, and Kimberley, Birmingham, harness back-band bag.
F. E. Colgrave, Brunswick-terrace, Brighton, constabulary staff.
J. Whitehead, Preston, agricultural machine maker, the machine expander.
J. Jones, Duke-street, Liverpool, optical gynecometer.
T. Allen, Radcliffe, Lancashire, trine box.—*Mechanic's Magazine.*

BRITISH BANK.—The BRITISH BANK have now REMOVED their OFFICES (from No. 52, Threadneedle-street) to their temporary business premises, No. 16, TOKENHOUSE-YARD, LOTHBURY.

BRITISH BANK.—As the DEED OF CONSTITUTION is now in the COURSE OF SIGNATURE by the SHAREHOLDERS, preparatory to the Bank being incorporated by Royal Charter.—Application for the remaining unpaid shares, according to the secretary, must be accompanied by the preliminary deposit of £10 a share.—Temporary Offices, 16, Tokenhouse-yard, Lothbury, London.

TENTH REPORT OF THE UNION BANK OF LONDON.

Sir PETER LAURIE, Alderman, Governor, in the chair.
W. M. NURSE, Esq., Deputy-Governor.

DIRECTORS.
George Webster, Esq.
John Barnes, Esq.
J. W. Sutherland, Esq.
James Farquhar, Esq.
Peter Laurie, Esq.
John Connell, Esq.
Charles Lyall, Esq.
John Chapman, Esq.
Henry Hulbert, Esq.
Archibald Boyd, Esq.
Lieut.-Colonel Matheson, M.P.
John Scott, Esq.
And 78 proprietors.

At a GENERAL MEETING of the proprietors, held at the court-room of the banking-house, 2, Princes-street, Mansion-house, on Wednesday, the 11th of July, 1849.—The following report was read by the secretary:—

The directors have much satisfaction in again meeting the proprietors, and submitting to them the tenth annual report of the affairs of the bank. During the 12 months which have elapsed since the last general meeting, that pressure upon the commercial interests of the country, which was the subject of remark in the last report, has been continued, and in many instances aggravated, by the political convulsions which have distracted nearly the whole of Europe.

A low value of money has been the natural consequence of the influx of foreign capital, and the contraction of mercantile enterprise, resulting from this state of disturbance; but, notwithstanding these serious disadvantages, the directors refer the proprietors to the annexed balance-sheet, as the best evidence of the continued progress and success of the bank, from which it will be seen that the net profits of the year amount to 28,617 l. 18s. 10d., out of which the directors now propose to appropriate the sum of 25,374 l.; being a dividend at the rate of 6 per cent. per annum, clear of income-tax; and 500l. as usual, in reduction of the preliminary expenses, leaving an unappropriated balance of 2743 l. 18s. 10d. to be carried to profit and loss new account.

The proprietors will observe, that the interest paid to customers on their current and deposit accounts, during the last year, amounts to nearly 34,000l. While the directors are aware that the cautious and prudent system of management which they have endeavoured to maintain may not have resulted in the more rapid accumulation of profits which might perhaps have been obtained by incurring greater risks, yet the accession of numerous and valuable connections, valuable not only as adding to the profits of the bank, but as evincing the estimation in which it is held by the public, proves to them the soundness of their views, and enables them to assure the proprietors of the steady and gratifying progress of the company.

In pursuance of the provisions of the Deed of Settlement, the following directors retire by rotation, viz.: George Webster, Esq., John Barnes, Esq., John William Sutherland Esq., who, being eligible, now offer themselves for re-election.

The Union Bank of London—June 30, 1849.

Dr.	LIABILITIES.	
Paid-up capital, 10l. per share on 42,250 shares	£422,900	0 0
Due by the bank on current accounts, deposit receipts (including interest accrued) circular notes, &c.	2,835,617	3 8
Reserved fund, invested in bank stock, as per contra	50,000	0 0
Surplus profit	£3,308,517	3 8
	28,617	18 10
Total	£3,337,135	2 6

Cr.	ASSETS.	
Cash in the bank, in the Bank of England, loans, Exchequer Bills, and other Government securities, bills discounted, &c.	£3,205,206	11 6
£25,035 l. 11d. bank stock (reserved fund)	50,000	0 0
Bank premises, consisting of freehold buildings in Princes-street, Mansion-house, and Argyll-place; and purchase of lease and fixtures of premises, 4, Pall-mall East	52,741	11 0
Preliminary expenses	11,500	0 0
Half-year's dividend to 31st Dec., 1848, amount carried forward	12,687	0 0
Total	£3,337,135	2 6

Appropriation of the Surplus.	
Dividends on paid-up capital—viz.: Half-year, to 31st Dec., 1848, already paid, at 3 per cent. Half-year, to 30th June, 1849, now declared, at 3 per cent.	£19,687 0 0 12,687 0 0
Proportion of preliminary expenses	£25,374 0 0
Undivided profit—carried to profit and loss new account	2,743 18 10
Total	£28,617 18 10

Profit, as above, after deducting all expenses paid or due, and interest (33,745 l. 18s. 10d.) allowed to customers on their current and deposit accounts

The Governor declared a dividend of 3 per cent., clear of income tax, for the half-year ending 30th June, being at the rate of 6 per cent. per annum, payable on and after the 21st instant.

Resolved unanimously.—That the report be received, approved, and printed for circulation among the proprietors.

That George Webster, Esq., be re-elected a director of the bank.
That John Barnes, Esq., be re-elected a director of the bank.
That John William Sutherland, Esq., be re-elected a director of the bank.
That it be recommended to the directors to take into their consideration the subject of the interest at present allowed to customers on their current accounts.

The meeting was then made special, for the purpose of considering the propriety of altering the qualification of the directors, and it was
Resolved unanimously.—That the qualification of the directors be, and is hereby increased, from 20 shares at the least, to 100 shares at the least, and that the clause of the Deed of Settlement be altered accordingly.

A proprietor then gave notice of a motion for the next annual general meeting, for an alteration in the 72d clause of the Deed of Settlement, relating to the present mode of supplying temporary vacancies in the direction.
Resolved unanimously.—That the thanks of the meeting be given to the governor, deputy-governor, and directors, and to the general manager, and other officers of the bank, for the able and successful manner in which they have conducted the affairs of the company.

The most cordial thanks of the meeting were voted to Sir Peter Laurie, the Governor, for his able and courteous conduct in the chair.

Extracted from the minutes. W. M. NURSE, Deputy-Governor.
W. LAURIE, Secretary.

[From the Plymouth Journal.]

WHEAL RUMBLE.—The quality of the ore discovered in the shaft at about 12 fms. under the level of the Tamar, is very good. The lode appears to be large, and there is every reason to expect that she will make a good mine.

WHEAL CALATOCK.—The new lode cut in the wheel-pit is composed of pench, prian, gossan, and yellow sulphuret of copper; it is from 1 ft. to 18 in. wide, and, as its underlay is north, it will intersect the lode on which the largest operations are being carried on at no great depth, and at the junction of these lodes, a large deposit of ore may safely be calculated on. One great advantage possessed by this mine is, that a cross-cut of about 70 fms. from the old engine-shaft will intersect these lodes at from 60 to 70 fms. below the deep adit, and as the shaft is sunk in firm ground, the old mine may be forked for a very trifling cost beyond the outlay for the engine.

PLYMOUTH WHEAL YEOLAND.—It is expected that the north lode will be cut 10 fms. under the tribute pitches in about three weeks, which will do much to develop the mine. The pitches continue to be productive, and the machinery works well.

PLYMOUTH WHEAL YEOLAND EAST.—This adit is not as yet cleared to the extent of the old mine's workings, and they have taken away all the backs, proving that this ground must have been productive of much tin.

WHEAL ANDERTON.—A meeting of adventurers was held on Wednesday, at the Royal Hotel.—Mr. W. E. Elliott in the chair.—The appointment of a purser was deferred until the audit committee had gone through the books, it being the opinion of the meeting that should the affairs of the mine be found properly conducted, the present parties should still have the management. This, from a desire of economy, was agreed to, and the same auditors as those chosen at the last meeting were retained.

ACCIDENTS.—(Continued).

Cefa Colliery, Falythra.—G. Griffiths was killed by the falling of a bucket on his head.

Tinacraft.—J. Trevela, aged 15, was precipitated into the snmp with the barrow he was filling, from the sollet over the shaft going way; it was 20 hours before the body could be got out.

Dolcoath.—N. Pearce was crushed to death by a fall of stone in the 132 fm. level.

Wheal Mary, Lelant.—F. Stevens fell 50 fms. down the shaft, and was killed on the spot.

We would call attention to a diagram, with some remarks, in another column, of Mr. Fourdrinier's machine for preventing accidents by the breaking of ropes and chains—a subject of paramount importance, and, in colliery economy, second only to a proper system of ventilation.

THE PURCHASE OF IRON RAILS FOR THE NEWCASTLE AND BERWICK RAILWAY.—The committee of investigation into the conduct of Mr. Hudson, and the past management of this railway, have elicited facts of the most startling character. It appears that, on the 11th January, 1845, and immediately before the bill for making the Newcastle and Berwick Railway was submitted to Parliament, Mr. Hudson concluded a contract which had been partly made in the previous month of October with Messrs. Thompson, Forman, and Co., iron manufacturers, of London, for the purchase of 10,000 tons of iron rails, at 6l. 10s. per ton. The first meeting, of which any record appears, of the provisional committee of the Newcastle and Berwick Railway Company was on the 30th of January, 1845, at which were present Mr. Hudson, Mr. Davies, and Mr. James Richardson, when it was resolved to advertise for tenders for the supply of 20,000 tons of iron rails; and an advertisement accordingly appeared in the papers, signed by Mr. Hudson, as chairman, requiring tenders to be sent in. On the 5th March, the same parties, with the addition of Mr. Frew, assembled, and tenders were received from various persons. Messrs. Thompson and Forman then sent in a tender, which was accepted for 14,000 tons, to be supplied at 12l. per ton. Four other parties were permitted to supply 1000 tons each. It appears that by arrangement with Thompson and Forman, Mr. Hudson was interested in this contract to the extent of 7000 tons—that quantity having been supplied out of the 10,000 tons purchased by Mr. Hudson at 6l. 10s. per ton. The profit on the supply of these 7000 tons would amount to 28,500l.; and Mr. Hudson must have known that he was acting illegally in being interested in any such contract with a company of which he was chairman.

PRICES OF MINING SHARES.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, JULY 14, 1849.

The Government have again shown their strength, and expressed their determination as to the course they intend to pursue, to which the humble working miner and collier must needs bow, so must the widows and orphans of those whose lives have been sacrificed; while the mother, with her orphan boy, has no hope held out that, were she to continue him in his employ underground, in case of his death arising from want of care, his sisters or herself perchance dependent in some respect on his earnings, would be thought of beyond the privilege she possesses of entering a poor law union; while those for whose wealth the lives of her husband and her child were sacrificed mingle with the aristocracy, indulge in their pleasures, and hold seats in the Houses of Lords or Commons, there to pass laws which shall embrace every subject but that which humanity should dictate, and which it demands.

The bill introduced by Mr. HUME and Mr. DUNCOMBE failed, and most certainly could not have been carried through in the form in which it was introduced; but it might have been modified and altered in committee. This, however, would not suit the Minister; and we accordingly find that Sir G. GREY intimates that the Government must oppose the measure, inasmuch that they have appointed two gentlemen to inspect and report on the colliery districts, who are required to reply to certain queries as to the cause of accidents, and to report on the remedies they would suggest—neither the one nor the other having any practical knowledge, but who must needs collate any information they may render from others, some of whom may possibly be parties interested in crushing all attempt at enquiry, or the introduction of any plan which has for its object the protection of the life of the working collier or miner.

Let Sir G. GREY go into the colliery districts, let him go underground, or even let him hear the tales as surface from the working collier, or the widow who weeps over the loss of him who was her succour and help, and grieves that she has not the means of affording support to his children who are left. Let him, we say listen to the widow, to the orphan, to the voice of humanity, and not be deterred from doing his duty, a duty he owes to mankind, a duty to his country, to nobly and humanely represent the interests of those who have made him "Secretary of State for the Home Department." We fear that the Home Department too much occupies his attention, and that he cannot look far away, even although the limits should be the coal districts of England.

We find that the honourable secretary is the representative of Northumberland. Here he is amidst the colliers; but we must not forget he is supported in the House of Commons by some 16 or 18 members, who are colliery owners; while his colleagues in the Upper House can number some eight or ten noble lords as colliery proprietors, and whose votes are too valuable to be trifled with, by bringing in, or even allowing a bill to go into committee which may affect their interests, those of the humbler class having no claim or right to be represented, or thought of, in the Legislative Assembly. This, we think, solves the mystery of Sir G. GREY's opposition to any measure than that which emanates from the Ministry, and which we have no hesitation in saying has for its object quashing all enquiry. We would ask, who have the Government appointed to inspect, what is the time when the result of their labours may be made known, and what is to be the result? We have had Parliamentary Committees, inspections, and reports without number—we had the report of the South Shields Committee; we have before us the weekly returns in our columns of the fearful loss of life; but of what avail this continuous and additional evidence? No, this will not suit the Government—they wish for procrastination; they appoint gentlemen incompetent for the office; and another one, two, or three years may, and doubtless will, pass away, with the sacrifice of some 5000 lives, and then will something be done by the force of public opinion expressed. Ere the opportunity is afforded to the collier and miner to feel that Government will not do justice to the working man, let the Minister well pause and reflect that the consequences of a strike for 24 hours, if general, would inflict injury to the extent of hundreds of thousands of pounds. We speak advisedly, and while the coalmasters laugh in their sleeves at the Ministerial measure, the working collier at the moment looks on with disgust, and that spirit of apathy which results from the conviction with which he is impressed, that he has no friend. Let, then, the press stand forward as his supporter, and boldly tell the Minister, that he dare not meet the question.

We must not, however, allow our feelings to carry us away from notice of the proceedings in Parliament during the past week. It will be remembered that in our last, and preceding Number, we adverted to the introduction of a bill by Mr. WYLD, Member for Bodmin; and although we did not confidently rely on success being attendant on the proposed measure, yet we thought, on looking over the bill, so simple was it in its form, that it would, at least, have been referred to a committee. We do not, for a moment, say it was perfect, more especially those clauses proposed to be introduced in committee; but it was drawn with one object alone in view—that of a periodical inspection by practical men, and a power given to the local magistrates to act; and, viewing it in such light, was highly deserving of the consideration of the Legislature. But the Government, through their organ, Sir G. GREY, said—such shall not be; we shall oppose the bill; and without a division it was negatived. This is all we have to say on this point; yet, we have not done with the question, and one other step will be taken, even by ourselves, in the course of the ensuing week, whereby the Hon. Secretary will, we have reason to believe, be called upon in his place in Parliament to declare that he will take upon himself the onus, and the odium, attached to his procrastinated and imperfect measure, or that he will allow of a bill being introduced which shall, at least, render it compulsory for his own agents to make reports within a given time, and that a committee be appointed to investigate the same. This, however, even if accomplished, will not remove or remedy the evil, for it is practical experience and knowledge alone that are required, and not merely theoretical dicta, which, we need hardly say, can never be effected, as the many instances to which we might refer have already rendered demonstrative.

Messrs. HUME, DUNCOMBE, AGLOSBY, WYLD, and BROTHERTON have been beaten—shamefully and disgracefully beaten—to the shame and disgrace, not of themselves, but of the Government, and the Members of the House of Commons. It is true that neither the one or other could put themselves forward as extensively concerned in collieries, but they had, in our esteem and opinion, a far higher claim to the attention of the House. They there represented the humble collier; they asked not to enter into the private affairs of the coalowner; they merely required that a bill should be passed, authorising a sum to be raised annually for the payment of inspectors, to be appointed to examine and report on the state of security of collieries and mines, so far as ventilation and machinery were concerned—not the machinery of the cash department, but simply that which affected the safety of the life of the collier or miner. Such has been denied. It now remains to be seen whether the consciences of these districts will not call on their Members to explain themselves, and we trust that an appeal to our respected civic magistrate, which will be presented within a few days, will at least enlist the Commons of the City of London, who derive so large an amount annually from the dues imposed on coal coming into the Pool, which shall shame the Minister into an act of justice and humanity.

Since writing the foregoing, we have received the following remarks from an intelligent correspondent, with the spirit of which, it is, perhaps, needless to add, we entirely agree:—

The conduct of the present Government, with respect to the adoption of measures for the prevention of explosions and other awful accidents in coal mines, is exciting the utmost contempt and indignation throughout the colliery districts, both among owners and miners. Instead of coming nobly forward, as a paternal Government, anxious for the well-being and comfort of all classes, would and ought to do, with a measure founded on practical information, capable of being matured and carried out by experienced and able men, they are using their patronage, and all the power they possess, to defeat those humane and holy objects which all good men are anxiously striving to promote. Mr. WYLD's bill, which, as far as we can judge, was far less objectionable than that of Mr. DUNCOMBE, has shared the same fate, and has been withdrawn under the

disgracefully sham plea that their own inspectors have not yet made their report. If we are to wait for any satisfactory and useful report from Messrs. PHILLIPS and BAKEWELL, even if assisted by the present commissioner, Mr. TREMENEER, coal-owners may rest satisfied that no inspecting invasion will ever disturb their territories, and the working colliers, as a class, may consider themselves a proscribed race, undeserving the care or attention of their fellow-men, and doomed to perish by hundreds as victims to the Moloch of patronage and Whiggism.

We again repeat that the appointment of Messrs. PHILLIPS and BAKEWELL as colliery inspectors is a flagrant job; they are not practical colliers; they may be (and we believe are) eminent as geologists; but the most intuitive knowledge, increased and extended by research and experience, of the internal structure of the earth is useless in such a case, without years of practice in the mine, and in all the various ramifications in details, and the extended appliances required under indefinitely varied circumstances, in the different colliery districts of the kingdom, where no two are alike. If the members of the Government who have had this immediate appointment wish to set themselves right with the public—even if these two gentlemen were recommended by the council of the Museum of Economic Geology, which we have been informed is the case—let them at once withdraw the appointment, and suffer the colliers' friends in Parliament to legislate on the subject, when, by the assistance of all the available practice of the country, a well organised plan of colliery inspection may be established and carried out with economy, and the most beneficial results to the country at large.

While we feel it our duty on one hand to censure, it is gratifying on the other to be able to say, that the steps being taken by Lord WHARNCLIFFE and his committee on this subject are in the right direction; already several first-rate colliery viewers and practical and scientific men have been examined, not as to the causes of explosions—a force which it appears to be the anxious desire of the Government to keep on the stage—but as to the best means to be adopted for the establishment of an efficient system of inspection, by which, as far as human agency can effect it, a check may be put to those horrifying details of human destruction which weekly assail us from all directions.

We understand, also, that several intelligent butties and old experienced working colliers have been summoned, whose explanations of underground working will, probably, prove of more value on such an occasion than volumes of scientific, geological, and chemical reports. We know that Mr. TREMENEER has been *puppling* in the north under the eyes of one or two large coal-owners, but has carefully avoided the discussion of the question with any practical men. It is evidently the object of the Government to shirk the question, for the mere purpose of keeping this snub bit of patronage in their own hands; and we trust Lord WHARNCLIFFE, and Messrs. HUME, DUNCOMBE, WYLD, BROTHERTON, &c., after the three withdrawals of bills brought in by them under never-intended-to-be-fulfilled promises from the Government, will boldly stick to a new measure, and carry it through the Legislature, though in defiance of them.

The House of Commons, on Monday evening, went into committee on the Joint Stock Companies' Winding-up Amendment Act, when the Government, through their officer (the SOLICITOR-GENERAL) thought fit to introduce an addition to the first clause, which is too important, in more than one sense, to be allowed to pass by unnoticed. The following is the clause in question:—

"And that nothing in this Act, nor in any Act herein referred to, contained shall extend, or be construed to extend, to any partnership, association, or company formed for the working of mines on the principle commonly called the Cost-book Principle, within the said Stannaries and jurisdiction of the said Court, unless the owner or owners of one-tenth in value of the shares in any such mine as shall appear on the cost book, shall present a petition to the Lord Chancellor or to the Master of the Rolls for the dissolution and winding-up, or for the winding up of the affairs of such company, which petition and the parties thereto, and all proceedings thereupon, shall be subject to the provisions of this Act, and the Acts herein referred to. And that on such petition being so presented, and notice thereof being given to the vice-warden by the party petitioning, the court of the said vice-warden, and the registrar and officers thereof, shall cease from entertaining and dealing with any cause touching such mine, except so far as may be allowed and directed by order of the Court of Chancery, in regard to any cause then or to be thereafter brought in the court of the said vice-warden, or in regard to any proceeding to be taken in furtherance of the said petition, and the purposes of this Act and the Acts herein referred to, and that the said vice-warden and registrar, in taking such proceedings, shall have all the powers which any district commissioner of the Court of Bankruptcy, and as any manner which by virtue of this Act and the Acts herein referred to may be brought to be fore him."

The clause amended by the SOLICITOR-GENERAL was agreed to (after some opposition from Mr. TURNER), on the understanding that the honourable and learned gentleman would add words to show that the Court of Chancery would only interfere in the dissolution of partnerships, as if a bill were filed in the usual way.—On Thursday evening, on the question for taking into consideration the amendments on this bill, Mr. WYLD complained that the mining property of this country (except Cornwall) and of Scotland, was to be placed under the control of this Act. He was surprised that a lawyer so celebrated as the SOLICITOR-GENERAL could have proposed such an exception. He hoped that a clause would be introduced into the bill strictly limiting the liability of shareholders. The bill, as it then stood, must have most injurious effects upon the interests of Cornwall.—The SOLICITOR-GENERAL said, that the question had been fully discussed on a previous occasion. It was quite open to the hon. Member to introduce a fresh clause at the next stage of the bill.—The amendments were then agreed to, and the third reading fixed for Monday next.

It will be well, then, to see what may be the effect of this clause as so introduced, and which, on the third reading, we suppose, so far as the Commons are concerned, will become law. How is it, we would ask, that Sir C. LEMON, Mr. H. WYLLIAMS, and other Cornish Members present, were silent? Is such to be attributed to their desire to uphold the measures of the Government, at the cost of the miner and mine adventurer? Forsooth, if such be the case, they must not reckon on the out adventurer to maintain their rents or royalties. The liberality, if such it may be called, partakes too much of a selfish character, and evinces a regardlessness of the interests of those whose bounden duty it is to protect, and who have been the means of returning them as Members of Parliament, and holding the high and important position in which they are placed. Let us, however, to the clause. In the first place, we contend that any interference with the Stannaries Court is an infringement of its rights, and if that the present be admitted, then good bye to the protection which the adventurer claims and can secure. Good bye to the old Cost-book System; for once let the Government, through their legal and authorised agent (the SOLICITOR-GENERAL), put foot within the threshold of the Vice-Warden's Court, supported by a majority of the Legislature, no matter of how few a number the "House" may be composed when the bill is smuggled through it; and, being passed, becomes a law with the tacit juncture of the Lords (although we hope Lord FALMOUTH, or some other noble lord, will stand up for the miner and mine adventurer), then we say the miners' protection is gone.

It is thus clear that, if any Act be passed whereby the Vice-Warden's Court, or the Cost-book System, be compromised by any of these amendment Acts, having reference solely to the Joint-Stock Companies' Registration Act, 7th and 8th Vics. c. 110, s. 63, such must be at variance with that last recited, and becomes an *ex post facto* law, which at all times is objectionable, should, at least, be shown necessary for the protection of the public. Such, however, is not the case; and we contend that, if any infringement, such as is contemplated by the bill before us, be carried into a law, it will be hard to foresee when those principles pertaining to the Cost-book System, and the Vice-Warden's Court, will not be prostrated. No security is afforded; and we think that it behoves every mine adventurer to protest against the introduction of the lawyer clause, which destroys the equity of our Vice-Warden's Court. Having said thus much on principle, we will at once take up the several points of the clause; and, assuming that no reason can be advanced to bring mines which were exempted in the particular Act referred to from the operation of the Joint-Stock Companies' Registration, and, consequently, the Winding-up Acts, and all their amendments, under that now proposed, we would offer some few common sense suggestions to the law tactics and notions of the SOLICITOR-GENERAL; while we trust they will be impressed on him in the House in another form, where the miners' representatives are supposed to have a voice.

We are told, nothing in the Act shall extend to any company formed for the working of mines on the principle commonly called the Cost-book Principle, within the jurisdiction of the Court of Stannaries, "unless the owner or owners of one-tenth in value of the shares, in any such mine as shall appear on the Cost-book, shall present a petition to the Lord Chancellor, or to the MASTER of the ROLLS, for the dissolution and winding up of the affairs of such company." We refer to the exact words of the clause above recited, it being observed, however, that the closing words of this particular paragraph are—"Which petition, and the parties thereto, and all proceedings thereupon, shall be subject to the provisions of this Act, and the Acts herein referred to."

The next clause states, that on such petition being presented, and notice given to the warden and registrar, they shall cease from entertaining or dealing with any cause touching such mine, excepting such as may be allowed and ordered by the Court of Chancery. Such is the farce attempted

to be played, and which, if successful, will prove a tragedy in the end; for it will not only despoil the Vice-Warden's Court and the Cost-book System of its privileges and its powers; but if that those possessing power do not exercise it, they may be considered suicidal. We have had our say let those who are more intimately interested well weigh our words, and take the necessary steps for the benefit and security of themselves, their co-adventurers, and the working miner.

In our Journal of the 23d June we alluded to the improved prospects of the ALTEN MINES; at the same time, we expressed an anticipation—which the report published in our Journal of last week has corroborated—that under the new system of management a still further improvement of the capabilities of the property might be confidently looked for. We should not have adverted to this fact, had not a report reached us, that the favourable views we then expressed were written with the object of preparing the shareholders either for a proposal to subscribe fresh capital to the ulterior development of the old workings, or preparatory to a further call being made. If such is the intention of the directors, and we have heard nothing to assume that it is so, we can assure our readers that we are not so much in their confidence as to be aware of the plans they may think fit to adopt for the profitable working of their mines. Since the commencement of the Journal we have always acted independently, and, as such, most conducive to the interests of the mining community, whether its speculations be confined to our home mines, or more widely extended in developing those abroad. We have never allowed our columns to become a vehicle to encourage a traffic in shares, either for their exaltation or depression.

Nearly every mine, from natural causes, experiences periods of increase and decrease in its produce; and it would be extravagant to imagine that any property could be carried on for a series of years in a career of uninterrupted prosperity; consequently a proprietary who are liable (as in a scrip company) to be constantly changing, view the establishment not from its real merits, but from the price they have purchased shares, and their market value, which, as we are all aware, is constantly varying.

Our aim has been to take a more extended view, and having watched the development of the different properties, possessing means of obtaining the best and most authentic information from practical and scientific men, we are enabled confidently to give, in general, a correct and unbiased opinion of their value—not as objects of traffic, but as mineral deposits. The shareholder, who purchases shares to-day, in general is not aware of the previous history of the mine, receives his information from the broker, who mostly can only inform him that the market price was higher or lower some few months since. If he has purchased at a low figure, he sells on a rise, and his interest in the mine ceases. Our object has been, by keeping a faithful record of mining proceedings, to enable shareholders, through the medium of our columns, to obtain a correct view of the real value of the property they may embark in, so that they may not, from a temporary depreciation, abandon their interests, which in many cases lead to a suspension of the establishment, and its concomitant evils. By carefully watching the movements of mining companies, the development of their lodes, &c., exposing careless or nefarious management whenever it unfortunately occurs, we conceive we are doing our duty, and following out that system which appears most beneficial to the mining interest, from the director to the labourer. Our information regarding the prospects of the ALTEN Company are derived from the information of practical men, who have investigated the capabilities of the lodes, and their mineralogical value, and who are aware of the true causes which has led to their depreciation: this has principally arisen from the capital required to be embarked in colonization, building, and the declaration of dividends at a too early period; while, to keep up the appearance of a too great prosperity, stopes were worked without the necessary number of levels being driven, and shafts sunk, to afford reserves. The management, both in London and ALTEN, are on the most cordial terms; each appear to be striving to do their best for the ultimate benefit of the shareholders. Where there is union, there is strength; and it needs no prophet to augur, a favourable result must, of necessity, be the consequence. We never allow ourselves to be misled by interested parties. Although we do not presume to infallibility, and on occasions our judgments may probably be erroneous, we feel the conviction that we endeavour to fulfil our duty as journalists fearlessly, honestly, and conscientiously—"Nil conscire sibi nulla pallescere culpa"—conscious of the rectitude of our intentions, we do not swerve from the path which we have determined, since our commencement, undeviatingly to follow.

In the House of Commons, on Wednesday evening last, Mr. MACKINNON moved that the House should go into committee on that precious piece of legislation, the SMOKE PROHIBITION BILL, which was immediately opposed by Mr. ROEBUCK, on the ground that it would seriously interfere with the manufactures of this country. His objection to the bill was, that the science of combustion was not in that state that they could legislate in the belief that, in those manufactures the subject now of complaint, they could dispose of their own smoke. The mere statement of the facts connected with the case was sufficient to show that they were utterly unable to do so. It was very easy to say, only keep up steadily fire, and all that was consumable would be consumed; but he knew otherwise. He explained from his own knowledge of manufactures (and his observations were perfectly correct), that there were many manufacturers who, if this bill were passed into a law, must shut up their establishments, and turn hundreds of the working classes out of employment. Messrs. CORELAND, STRICKLAND, BRIGHT, CEMITT, SPOONER, and other practical and scientific members, opposed the bill, on the same grounds, and on the fact that, from the nature of the terms used in its drawing up, it never could be carried out. The motion was, however, carried by a majority of 19—83 to 64; the House went into committee accordingly, and, during the whole evening, it was found impossible to get through the first clause, on the definition of the term *opaque smoke*, which had been introduced by the erudite framers of the bill. The whole debate appears to have been a scene of fun and laughter, not without many feelings of compunction that the valuable time of the members should be wasted in the vain discussion of so impracticable a bill. Mr. MACKINNON, in describing *opaque smoke*, said it was smoke that could not be seen through. Mr. ROEBUCK said, there never had been smoke sufficiently "opaque" as not to be seen through; if they did not define what the term actually meant, there would be endless disputes as to the proper construction of the Act.

Mr. RICHARDS said that the hon. gentleman had certainly not been successful in explaining to the committee what the word "opaque" meant. Smoke, which might seem opaque one moment, might not be so the next. He recollected when the famous Sugar Bill was before the House there was a sample of each description of sugar produced before the committee. If, in like manner, the hon. gentleman would give them a sample of opaque smoke, they would be enabled at once to understand his meaning. (Laughter.)—Mr. ROEBUCK said that the deleteriousness of smoke did not arise from its opacity, or from the part which could not be burnt, but from the carbonic acid gas evolved from it, which was in itself perfectly transparent, and could not be seen; therefore, when the hon. gentlemen wished to prevent the evil effects arising from deleterious gases, he could not hope to get rid of it by merely preventing opaque smoke.—Mr. C. P. VILLIERS said that he found that a little further on in the bill the hon. gentleman attempted to define opaque smoke as that which was not transparent at the point. (Laughter.) But he also provided that one witness should be deemed sufficient. If that were to be so, he (Mr. V.) could not conceive anything more tempting to a poor working man in a manufacturing district than that he should be able to go to a manufacturer, and say that he had seen opaque smoke coming from his chimney, and if he did not agree to his terms he should give information to the magistrates, and have him punished under this Act. Opaque smoke was the only smoke that was mentioned in the bill, and there had been the greatest difficulty in giving a definition of it, every new attempt to define it only making the matter more opaque and cloudy than it was before. (A laugh.) Besides, how could an informer prove the issuing of noxious effluvia from a tall chimney, for he could not obtain possession of it and produce it. Why, it might be brought to his nostrils by a side wind. (Renewed laughter.)—The ATTORNEY-GENERAL said, that he for one could not vote for the clause; in fact, the clause and the bill itself had been most impracticably drawn—it makes smoke an offence. (Laughter.) Whatever might be the difficulty in the way of defining opaque smoke, the present attempt at definition certainly made that difficulty greater, for it would render it necessary for a manufacturer to have constantly a witness outside to rebut the informer.

Sir JAMES GRAHAM's observations were most appropriate, and evinced much knowledge of the danger of interfering in the details of manufactures and commerce, and great anxiety for their success and uninterrupted progress. He assured the House that, had he been present, he should have voted with the minority against the bill; it had come down from the other House, and yet a bill more absurdly drawn it had never been his fortune to witness. He dwelt at some length on several of its absurdities, and showed, with Mr. ROEBUCK, that by the adoption of the improved machinery for preventing the nuisance from opaque smoke, an effluvia had been produced of so noxious a character, that parties would be liable to prosecution for one nuisance, which they necessarily committed in at-

empting to avoid another. After much bantering, and with considerable reluctance on the part of Mr. MACKINNON, he at last consented to the adjournment of its further consideration for a fortnight—a proceeding, we trust, tantamount to throwing out the bill.

And this is another specimen of hereditary wisdom legislation, a further attempt at interference with subjects, the principles and importance of which they are entirely ignorant of, by a body of men who are a century behind the age, and invested with powers and privileges totally at variance with the spirit, the advancement, and the requirements of the times. It is further much to be regretted that, in a so-called liberal and enlightened House of Commons, a majority of 19 members out of 147 could be found for going into committee on such an irreconcilable piece of absurdity as this bill has proved to be. It is, however, evident, and we cannot but rejoice at the indication, that there appears sufficient common sense, as well as scientific knowledge, in what ought to be the people's house, to prevent the passing of a measure which would inflict a most injurious evil upon society, be a continual source of annoyance to manufacturing industry, and a feculent hot bed for the protection of that pest of society, the common informer. We have ever been advocates for, and patronised for the extent of our humble powers, all inventions of a really scientific nature for the prevention of smoke; knowing, as now does every man who has to support a steam or other furnace, that the less dense smoke, consisting of masses of pure uncombusted carbon, his chimney emits, the more he saves in the consumption of fuel, and, therefore, it is to his interest to produce as little smoke as possible; but there has never been an invention yet which is constant in its exercise, and, therefore, scores of opportunities would continually occur, in which manufacturers would be robbed with impunity, under the working of so iniquitous a law as the one proposed.

From the report of the meeting of the proprietors of the **ROYAL SANTIAGO MINING COMPANY**, which was held on Wednesday last, and given in another column, it will be seen that the misunderstanding, which has been in existence for so many years, between this and the **Cobre Company** is now under adjustment, and is expected shortly to terminate in an amicable settlement. This must be satisfactory news to the shareholders in both companies, more particularly the Santiago, who, from the commencement of the cause, have seen their works at a standstill, their subscribed capital unproductive, expensive liabilities incurred, and have individually been harassed by that worst of all embarrassments—suspense, as to the termination of a Spanish lawsuit. This is another instance among many of the difficulties attending the profitable investment of capital for the purpose of working mines in distant foreign countries. It is bad enough not to be able to have the slightest personal knowledge of what workings are in progress on your own property, but entirely to depend on the honesty of agents, whom you must confide in, but cannot possibly control; but the evil becomes magnified to a most enormous extent when parties are reckless enough to rush into legal conflict in a Spanish colony, for the redress of some, perhaps, only imaginary grievance, and trust their property and their peace of mind to the tender mercies of the immaculate guardianship of the forensic worthies of the Havana, or the more delicate fingerings of Madrid lawyers in case of an appeal—an almost certain event in protracted Spanish lawsuits.

We are glad that, so far, the differences, which have already cost the company 1200*l.*, are likely to be settled, and shall be still more rejoiced to find the opinions of the chairman confirmed—that the Cobre Company have shown a disposition to promote their interests—that there was now a prospect that they would work one set of mines, and that company the other, in perfect good fellowship—and that the result will be the commencement of regular dividends at the next meeting.

We beg to call the attention of the working miners of England especially, and also of the labouring classes of this kingdom at large, to a statement made a few days since in Parliament, during a debate on the state of the nation, in which they are directly, if not criminally, interested. The part of the statement which concerns them is, that they pay annually about 10,000,000*l.* sterling for ardent spirits, which it hurts their circumstances and their health to use at all; and, further, that they pay 4,000,000*l.* for the remedy of diseases arising out of preventable causes. Now, we may assure our working friends, that we have no intention whatever of recommending total abstinence, because we think it only one degree better than total nonsense; but we must say, that an intemperate and extravagant indulgence in so vast a quantity of inflammatory and exciting liquors is a most ample cause of ruin, in a double sense, to them and to their families. For them, to what good purpose is it that employment is plentiful and wages high, as they both occasionally are, if the surplus of their earnings takes so ruinous a direction, and results in so fatal a benefit. They complain of the difficulty of the times, when their own improvidence and want of sobriety punishes them ten times more severely than dulness of trade and low prices ever could punish them. Here is an expenditure, inexcusable and licentious, amounting to 14,000,000*l.* a year, which ought to be laid out on the comfort of their cottage homes, and the education of their children, which is as good as thrown down a common sink, and lost in the great waste-tub of the nation. This sum is equal to the total value of the metallic produce of the United Kingdom, and is spent, not only to the present loss, but to the permanent injury of those who so foolishly dispose themselves. We trust that not a great number of our mining labourers are justly included in the terms of this accusation, and that their number, whatever it is, will be in a state of daily diminution.

It is gratifying to be able to communicate the success attendant on the formation of the company for working the **TYWARHALE AND NANCEKEUKE MINES**, referred to in a recent Number, and which have of late been carried on by the Duchy of Cornwall, whose province not being the working of mines, but content with the royalty reserved, had only taken up the sets, and extended their workings, from the desire of employing the mining community, rather than that the mines should have been abandoned, as in the case with Polberrow Consols: at the same time that the Duchy, by this course, brings the mines into an active state, so as to induce capitalists to embark, and whereby the employment of 800 or 850 persons, embracing probably 3200 to 3500 men, women, and children, for whom a subsistence is provided, it is to be observed, they also secure the royalty, which otherwise must have been sacrificed, had the working of the mines not been prosecuted. The authorities, having spent some thousands beyond the amount of purchase money given for the sets, with the engines, machinery, &c., have willingly consented to sacrifice a large portion of the capital employed, and to grant a lease at dues of 1-20th, which we recommend in times like the present to be adopted, and serve as a precedent, by other lords, more especially those who were the advocates and supporters of the free-trade system, as affects the introduction of foreign ores.

It is to be regretted, looking at the produce from our home mining districts, that a visible falling off has taken place, which we consider attributable to two causes—in the first instance, the monopoly and rapacity of the smelters, who, we understand, held their meeting in secret convulsion this week, then to determine on what should be the price of copper to the consumer, and what should be the price they should give to the miner for his ore—a little knot of half-a-dozen who preside over the metal market, as affects our copper trade and mines, and who, while they may be pointed at, laugh all to scorn, knowing their power. With them "might is right;" and careless are they whether the mine adventurer gets a return for his capital, or the working miner a fair day's wages. They know that the lords get their dues; and while we find that, in the agricultural districts, the landlords reduce their rent roll in consequence of a falling off in the crop, or the state of the markets, we would ask, where is the instance that the lord of a mine comes forward to reduce his royalty or dues? There are some one or two solitary instances which we might adduce as exceptions to the general rule, and, we believe, the late Lord DE DUNSTONVILLE may be held forth as one of those honourable and liberal men, leaving to our correspondents to cite other cases. It may be that our returns for the past few months have not been so great, arising from the reduction in the standard, and the policy observed in some few instances of withdrawing ores; in such case we would, however, ask, is not the effect that of reduction of labour, whether as regards the number employed, or the value attached to it? And would again further enquire, how has this reduction in the standard been brought about? The answer is simple, while it is

two-fold—first, by the monopoly of the smelters; secondly, by the introduction of foreign ores, duty free.

In the case before us, we are glad to find that the officers of the duchy have humanely aided the working miner; they have willingly consented to a present loss, which we trust will be returned by increased and increasing dues, and they have granted liberal terms. The report stated that the monthly returns might be taken at 400 tons; we find the sale this week is 416 tons, producing 6000*l.*, and the next month it is calculated that the quantity will be at least 450 tons. The falling off in our home mines will be seen from the returns in our last; and if we take the reduction at 820 tons of metallic copper for the past year, which would give, at 8 per cent., 10,250 tons of ore; which again taken at 5*l.* 2*s.* 6*d.* per ton, would show a reduction of 52,531*l.* 5*s.* per annum on the produce of our home mines; and, consequently, a reduction, in such proportion, of the labour employed, or the rate of payment.

Our object in the preceding remarks is not only to do justice to the Duchy of Cornwall, but to hold out to lords of mines (more especially those who are resident, too many of whom are too apt to sacrifice the miner for political purposes) that if the mines be not protected and upheld, as in the case under notice, the working miner will be unemployed, unions must be built, poor laws must be enforced, rents will not be forthcoming, mining industry will no longer be hailed as the source from whence the manufacturer, the merchant, the shopkeeper, the fisherman, the agriculturist, and the labouring classes, can look for support; and hence the necessity, on the part of lords of mines, of generally acting on that liberal and humane principle adopted by the Duchy of Cornwall—that of giving support to, and making sacrifices for, the working miner, with whose success, and that of the adventurer, they are so intimately associated.

LIFE ASSURANCE FOR THE MINING INTERESTS.

THE SEA, FIRE, AND LIFE ASSURANCE SOCIETY.

We refer our readers to our advertising columns of to-day, in which appear the prospectus of this institution, which was established with a view to meet the advancement of the age, and founded on liberal and, to the assured, highly advantageous principles: it was united with the Port of London Assurance Company, incorporated in 1847, and admitted to Lloyd's in Jan., 1848. Before proceeding to notice some of the more pointed advantages which will be found in the prospectus of this society, we would call attention to the fact that the **Miners' and General Life Assurance Association**, promoted by Mr. Alfred Burt, has merged in the one under notice, and forms a highly prominent feature in their business. Mr. Burt, whose work, *On the Principles and Practice of Life Assurance*, we favourably noticed in the *Mining Journal* of 16th June last, is now the actuary in the life department of this institution; and from his knowledge of the details and practice of this peculiar department, will, we have no doubt, not only secure to him the approbation of the gentlemen forming the executive of this respectable society, but greatly advance its prosperity, and produce the most advantageous results, both to the proprietary and the assured.

One simple and peculiarly satisfactory feature in this society is, that its capital is 100,000*l.* in 1*l.* shares, without further call, or liability; but should it be required, the directors have the power, under the Deed of Settlement, to call a general meeting, for the purpose of raising further subscriptions, with the consent of the proprietors. A guaranteed interest of 5 per cent., payable half-yearly, is secured on this 100,000*l.*, irrespective of dividends accruing from the several branches of business. The marine department of this society alone, it appears, produces a clear income of 20,000*l.* per annum, one-third more than sufficient to pay the guaranteed interest on the subscribed capital. The life department of the society, which is based on the **Miners' and General Assurance Association**, promoted by Mr. Burt, and as such comes more immediately within the province of our remarks, is established by persons connected with that large and influential body of individuals—the mining interests of England and Wales, a class of upwards of 2,000,000, and whose annual returns of capital approximate to 40,000,000*l.* sterling.

As life assurance has been extended, the various classes of the community have embraced the advantages of establishments of their own, adapted to the peculiar circumstances of those portions of society with which they are respectively connected; and it is remarkable, that while in the metropolis alone the life insurance companies of all classes and descriptions exceed 100 in number, with engagements computed at 115,000,000*l.* sterling, those companies do not comprise one emanating from the mining classes, or embracing those interests which have done more than any other to develop the resources and promote the extension of the commerce of the country. So long, then, as this important and influential class of the community possesses no assurance association immediately identified with its peculiar interests, it is manifest that an extensive system of life insurance remains yet to be accomplished.

The individuals directly interested in or connected with mining property in this kingdom, are more numerous and not less wealthy than the members of the clerical, medical, and legal professions, now represented by not fewer than nine assurance companies; and it is calculated that the proprietors, agents, and those immediately or indirectly interested, represent an amount of population and of fixed property nearly equal to that of all the other classes of the kingdom having representative assurance institutions. This extensive and wealthy interest is, therefore, unquestionably adequate to sustain a prosperous assurance society, adapted for securing the advantages of life insurance to the numerous individuals of which it is composed; and for this purpose the life branch of this society has been established, holding out the utmost advantages life insurance can bestow for their particular interests, and also all other classes on equally liberal terms. This department is based entirely on the mutual system, the whole of the profits being divisible among the assured, and every policy once effected remains, under all circumstances, indisputable; no stamp duty is charged, and the assured are still protected by the subscribed capital of 100,000*l.* We have not further space to dilate on the evident advantages held forth by this new established society, and we may, therefore, congratulate the mining community that an institution so long desired is now fixed, we think we may say, on a firm, and lasting basis.

REED'S RAILWAY CHAIRS AND RAILS.

We sometime ago gave a description of these chairs in our Journal. Having two of them now lodged in our office, we again have pleasure in referring to them, as we consider they are an improvement on the old chair. Simplicity of construction, economy, and durability, are the qualities they possess. The principle on which the chairs are formed is a lengthened bearing for the rail, calculated to prevent deflection, and give stability to it. Thus, the rail having a greater support from the chair, it is obvious that a lighter one may be used with safety. Both sleeper and block chair possess these advantages. With regard to the block chair, it is cast in one piece, and ready to be laid down as it comes from the foundry. At curves the opposite corresponding chairs are tied together, at certain distances, with iron rods, to preserve the gauge of the rail. The expense is little (if any) more than that of the wooden sleeper and chair, and has the great advantage of durability, whilst timber must inevitably deteriorate, and be relaid from end to end, every five or eight years, thereby incurring a great expense, besides needing constant attention of plate layers, which the block chair does not require.

We understand a license has been taken for the adoption of Mr. Reed's chairs and rails on one railway, and we subjoin the certificate of the Newcastle and Carlisle Railway engineer, on a portion of which line the chairs and rail have now been in use for upwards of two years:—

Sir,—In reply to your note respecting the rails and chairs which you desired to have tried on this railway, I have to say, that they have been in use for nearly 12 months, and that they are very strong and substantial, and capable of carrying a tonnage of any extent, and answer well on firm ground, on which they were tried. The lap-joint rails, I think, cannot be exceeded—they are the best joints I have seen. **PETER TATE,**
Engineer to the Newcastle and Carlisle Company, Newcastle-upon-Tyne.
S. Reed, Esq., Newcastle-upon-Tyne.

PROGRESS OF MINING IN SPAIN.—During the past spring, a general improvement has taken place in mining operations throughout Spain—the Government showing a laudable desire to promote to the utmost of their power mining enterprise. The admission of British machinery and mining apparatus, by the wise alteration in the tariff, in the past session, at a reasonable duty, has tended materially to extend adventures, and stimulate the investment of British and other capital. Several already projected railways will now be carried out; and that great drawback to mining enterprise, the absence of means of economical transit, will shortly no longer exist. The following is the official return from the engineer-in-chief of the quantities of silver raised from the following mines in the month of June:—Carmililla, 1728 ozs.; Encarnacion, 1751; Tros Amigos, 448; San Jose, 957; San Juan, 421; Virgen del Pilar, 432; Union, 1045; Concepcion, 478; San Jorge, 1690; Lozana Primera, 589; La Constante, 281; total, 9848 ounces. Several large mining speculations are projected, and are now in this country for the purpose of obtaining machinery and Cornish miners. The quantity of silver obtained from the mines of Sierra Almagrera, Murcia, and Guadalcajara, during May last, was 12,379 mcs., of 8 ozs. each.

CONTRACTS FOR COAL.—On Wednesday next, the 18th inst., the committee of the East India House will be ready to contract for 5000 tons of coal, to be delivered at Bombay. On the 24th inst., the Board of Admiralty will contract for 4000 tons, to be delivered at Dover for the use of the mail steam-packets. Also, on the same day, 3000 tons to Holyhead, and 4500 tons to Kingstown, for the same purpose.

LAUNCH OF THE GENERAL SCREW STEAM-SHIPPING COMPANY'S VESSEL, BOSPHORUS.

On Saturday afternoon last, another screw steam iron-vessel, destined to run between Liverpool and Constantinople, was launched from the extensive building and iron-works of Messrs. Marc and Co., Blackwall. There were a number of distinguished persons present, amongst whom we noticed the Turkish Ambassador and suite, Edward Zohrab, Esq. (the Ottoman Consul General), Capt. Ford (of the Ottoman Steam Navy), James Laming, Esq. (managing director), Mr. Clarke, Mr. Leary, Mr. Jos. Maudslay (the eminent engineer Mr. White (of Cowes), Mr. Campbell, C.E., Col. Wilson and lady, the Marquis of Lisboa, Viscount and Viscountess Moncorva, with the Baron and Miss Moncorva, Lady Morgan, Lady Blake, Milner Gibson, M.P., R. Balfour, Esq. (director) and ladies, W. H. Howes, and John Margetson, Esq. (director), and large party of ladies and gentlemen.

Miss S. Zohrab, niece of the Turkish Consul, performed the ceremony naming the vessel, by throwing the customary bottle of wine at her bows, and naming her the *Bosphorus*, as she glided slowly and smoothly into her native element, amidst the cheers of all present; she rose most buoyantly, and as she settled on the water a little by the stern, she drew forth general admiration for her beauty and symmetrical proportions, which are, in length between her perpendiculars 175 feet, breadth 23 feet, and depth 16 feet, making her burthen in tons 530.

Subsequently the company adjourned to the Mould Loft, where they were very handsomely entertained by the principal of the firm. In drinking success to the *Bosphorus*, a compliment was paid to his Excellency, the Turkish Ambassador, who in reply expressed his satisfaction of what he had witnessed, and said he should feel much pleasure in promoting the interest of the company to the utmost of his power.

The health of the pretty sponsor of the *Bosphorus* was then drunk, and succession those of M. Zohrab, chairman of the General Screw Steam-Shipping Company; Mr. James Laming, the managing director; Capt. Ford, the superintendent; Mr. Maudslay, the engineer; and Mr. Waterman, the architect.

A very interesting conversation then took place on the merits of commercial screw vessels, and a meed of justice was rendered to Mr. Laming for his invaluable labours in working out the success of the screw propeller as applied to merchant vessels in an economical point of view. It was then stated that, by his extraordinary indefatigability, he fully realised the most sanguine expectations of those connected with him in his enterprise. Upon these grounds was anticipated that, under the patronage and support of the Ottoman Government, the new undertaking of the General Screw Steam-Shipping Company would prove a remunerative investment.

The *Bosphorus*, after she was launched, was immediately towed round to the East India Dock, there to receive her engines, which are 80-horse power, and she is to be fitted with all despatch; and two sister ships, the *Hellas* and *Thetys* (which will be shortly launched), and another, are building by Messrs. Marc and Co. for the same service, the company being satisfied that, in the *Bosphorus* they have an excellent model for screw steaming, as they have also a strong and well-built ship for the purpose required.

STEAM NAVIGATION ON THE INDIAN RIVERS.*

Although, through the possibility of internal connection by means of its rivers India has a practicable mode of navigable communication equal to any country in the world, if scientifically made available, the shoals and quicksands the shallow and continually shifting nature of most of its waters, have hitherto been a bar to any continuous and regular transit. Mr. Bourne, whose valuable work on the steam-engine we noticed in the first Number of the *Mining Journal* of the present year, has just returned from India, and published a report, illustrating the practicability of opening up the internal communication of that country at a comparatively inconsiderable outlay, by the introduction of steam-vessels of peculiar construction on the large rivers which flow from the interior to the coast, whereby a ready outlet would be afforded for the cotton and other valuable products of Central India, and an equally eligible inlet afforded for British manufactures. There can be no doubt but that the possession of the Punjab could be rendered much more advantageous by making the Indus navigable into the very heart of its territories; and the author of this report clearly points out how this may be most economically effected. The Ganges is the only river upon which it has hitherto been found practicable to establish steam-vessels for commercial purposes; and even on this river, steamers cannot ascend higher than Allahabad, midway between Calcutta and Delhi, at the confluence of the Jumna and Ganges. They are unable to run during the night, lest they might get on the shoals, from which removal would be difficult; and the progress made is not more than 50 or 60 miles per day. Notwithstanding every precaution, the vessels are perpetually getting aground, and often remaining there for days and weeks together, naturally causing a vast deal of delay and expense. The opinion of Mr. Bourne is, that a great river like the Ganges, full of shoals and quicksands, and perpetually shifting its channel, is practically unimprovable; and he has accordingly, and very reasonably, in this age of surmounting every kind of engineering difficulty, and what a few years since would have been considered impossibilities, proposed the adaptation of steamers to the river, since the river could not be adapted to the present class of steamers.

The present Ganges boats carry only a cargo of about 60 tons upon a draught of 3 ft. of water, and realise a speed of only six or seven miles per hour, and are totally unable to get off the banks of the river by any prompt or effectual process. Mr. Bourne has suggested a boat capable of carrying 250 tons, with only 12 in. draught of water, and James Watt and Co. have offered to construct this description of steam-vessel, which they guarantee to realise all expectations. They have offered to contract for the construction of such a boat, with engines of 350 horse-power, for 35,000*l.*, and feel no difficulty in the undertaking, anticipating a speed of 15 miles per hour, with an ample margin for all contingencies. From Mr. Bourne's investigations, he appears confident that the distance between Calcutta and Allahabad, which is 450 miles, may, with this new construction of boat, be accomplished in 34 days instead of 22, as at present, and the whole distance to Delhi in from 6 to 7 days. The present amount of goods traffic on the Ganges is upwards of 1,000,000 tons a year—an amount which would fully warrant the construction of these improved steamers, and more than could be hoped to be monopolised by them for years to come.

The Chumbul, the Godavery, the Indus, the Nerbudda, and other rivers, could be navigated by these proposed measures, and most fortunately for the facilitating the undertaking, coal is found near the sources of the several rivers proposed to be navigated. Mr. Bourne considers that 250,000*l.* would be ample for the establishment of five steam-boats, and leave a floating capital of 50,000*l.*, upon which quarter of a million he calculates, at 20 voyages per year each, for goods and passengers, taking every possible charge, there would be a clear profit of 64,000*l.* per annum, or 25*l.* per cent. per annum applicable to a dividend. The correspondence between Mr. Bourne and the house of James Watt and Co., the author's general remarks, the proposed colonization of Cashmere, and some statistical matter in an appendix, are highly interesting, and will be read with much satisfaction by every one at all connected with, or anxious for, the advancement of the prosperity of our Indian possessions.

*Indian River Navigation: a Report addressed to the Committee of Gentlemen formed for the Establishment of Improved Steam Navigation upon the Rivers of India. By JAMES BOURNE, C.E. Illustrating the practicability of opening up some Thousands of Miles of River Navigation in India, by the use of a new kind of Steam-Vessel, adapted to the Navigation of Shallow and Shifting Rivers. London: William H. Allen and Co.

MALLEABLE IRON SCREW PROPELLERS.—It has hitherto been usual to make screw propellers of brass or cast-iron, which, on any imperfection taking place in them, or any difference in form being considered advisable, have to be cut down and recast. An experiment is now in progress in the factory at Woolwich Dockyard to make screw propellers of malleable iron, to obviate these inconveniences, and no doubt is entertained of its success. The screw propeller at present in course of formation, and making of malleable iron by the aid of one of Nasmyth's hammers, has had one of its flanges and the centre completely formed, and when the other flange is fully added, will weigh 2*l.* tons, or 50 cwt. When dressed and finished for use, it is calculated it will weigh 35 cwt., and will be 12 feet 8 inches in diameter, the greatest breadth of the extremity of the flanges being about 6 feet. The foremen and workmen engaged in making the malleable iron screw propeller have shown great ingenuity in overcoming the difficulty of giving the curved form to the flanges with a flat faced hammer, presenting a surface of 10 by 8 inches. This they have completely effected, by placing a small piece of iron attached to a long rod betwixt the face of the hammer and the flange, so as to give it the requisite curve with the greatest ease.

IMPORTANT TO BUILDERS.—Mr. George Nasmyth, has discovered that the strain hitherto applied to the bow and string principle is incorrect, and that it should be upon the cord or string, and a uniform pressure on the top of the bow, and bearing on the case. In this manner weights are sustained of immense magnitude, and the discovery will place it in the power of engineers, architects, and builders to construct public edifices, bridges, and warehouses of a span never yet attained, or even meditated.

IMMENSE WIRE ROPE.—A wire rope, 3½ inches in diameter, 10 inches in circumference, and 500 feet long, has been manufactured by R. S. Newall and Co., of the Teams. It is, we believe, the largest wire rope that has ever been made. The weight is 90 lb. per fathom. Its destination is India—where, it is supposed it will be used in the construction of a wire-rope bridge.—*Gateshead Observer.*

CAUTION TO COKE DEALERS.—A few days since a large fire occurred at Salisbury, from the spontaneous combustion of a large pile of coke, said to have taken place from the intensity of the sun's rays. Although an atmosphere at a high temperature, and very dry, would be favourable to such combustion, it is probable that coke, like many other carbonaceous matters, may have a tendency to ignition by two close packing in large quantities. It would be better, therefore, that it should be always stacked in such a way as to allow the air to pass through the mass.

Original Correspondence.

IMPROVEMENTS IN SMELTING COPPER.

SIR.—In your Journal of the 7th inst. I find, under the above head, a portion of the specification of a patent in which I have an interest. It is, however, open to the same nature as Mr. Low's (see your correspondent, "Germanicus"); it does not at all explain the nature of the invention; and is, moreover, calculated to convey an erroneous idea of the process altogether. In order, however, that the parties concerned in the matter may be better informed, I beg to forward you a more detailed account of the invention, if you can devote the space. I may also mention that "Germanicus" will perceive that we prefer to employ a furnace in which atmospheric air is admitted at the side, or at the sides, which kind of furnace is now in common use, and was protected by letters patent granted to a Mr. Sheffield.—JOHN MITCHELL, July 9.]

This invention consists of improvements in obtaining metallic copper from certain copper ores, and other substances containing copper. The substances which are intended to be treated by the methods to be described are—1. The sulphates of copper.—2. The sulphates of copper, mixed with any other metallic sulphate or sulphates.—3. A sulphate of copper, containing a sulphate or other salt of copper.—4. A sulphate of copper, mixed with any other metallic sulphate or sulphates, containing a sulphate or other salt of copper.—5. Carbonates or oxides of copper.—6. A mixture of carbonate and oxide of copper, containing a sulphate of copper, or a sulphate of any other metal.—7. A carbonate or oxide of copper, with a sulphate of copper mixed with other metallic sulphates.—8. A mixture of any of the above carbonates or oxides, or carbonates and oxides, with a metallic sulphate or sulphates, and a sulphate or other salt of copper.—9. Carbonate or oxide of copper, or a carbonate and oxide of copper, mixed with a sulphate or other salt of copper.

In the ordinary method of copper smelting the sulphate ores are subjected to numerous series of alternate roastings and fusions, the ultimate object of which is to convert all the sulphur they may contain into sulphuric acid, and the iron and the copper into oxides. The oxide of iron passes off in the siliceous slag, whilst the copper is concentrated in the regulus, which at last is brought into such a state by the above operations, as it contains but little sulphur and iron, both of which substances are removed by the refining process, which in this stage it has to undergo; and the copper so produced is either cast into ingots, or is submitted to another operation, by which it acquires the desired degree of malleability. It is, therefore, evident that the object of all the above operations is to remove sulphur and iron; this is done progressively, and at the same time, in the process just described. Now, the patentees propose to divide this into two distinct operations.—1. The sulphur will be entirely removed by treating a rich ore, or a regulus (obtained without the addition of iron or alkali), in a finely divided state, in the manner to be hereafter described.—

The iron will be separated, and the copper obtained in comparatively a pure state, by treating the mixed oxides resulting from the first operation with siliceous and carbonaceous matters, without the aid of iron, or the application of electric currents. Thus, by the new process, the smelting or reduction of copper from copper ores, &c., is effected in fewer operations and in a much shorter time than in the ordinary process, and, in many cases, but one roasting and one fusion will be necessary; and in others at most but two roastings and two fusions.

The chief difficulty in getting rid of the last portion of sulphur depends upon the circumstance, that during the ordinary roasting of the sulphur ores of copper, the whole of the sulphur is not expelled in the gaseous state as sulphurous acid; but a portion is converted into sulphuric acid, which unites with a corresponding equivalent proportion of oxides of copper and iron to form sulphates of copper and iron. This, however, is not the case for lime, baryta, strontia, or magnesia being present, either in the caustic or carbonated state, then a still greater quantity of sulphuric acid is retained by these bases to form sulphates of lime, baryta, strontia, or magnesia. Now, the patentees have found that whilst sulphates, either of copper, iron, lime, baryta, strontia (these three latter sulphates may be discarded in practice, as the results they produce are not sufficiently marked to be injurious), and magnesia are present, that on reducing the oxides of copper and iron, and the sulphates of iron, copper, &c., the latter are decomposed, giving rise to the production of the sulphurets of iron and copper, in addition to the metallic copper and iron produced—so that a very considerable portion has to undergo a further roasting. In the new process, about to be described, this difficulty is overcome.

Again, when a mixture of oxides of copper and iron, free from sulphur, is to be reduced, it will be found that copper is indeed separated, but containing a very large quantity of iron. The copper so produced would, therefore, have to be refined, in order to fit it for the market. This the patentees also avoid, by forming silicates of copper and iron, and then reducing by carbonaceous matter. The silicate of copper is completely reduced, whilst the silicate of iron is left intact.

Owing to the influence of the presence of lime, baryta, strontia, and magnesia (more especially the latter earth), on the roasting process, the patentees divide all copper ores, and other substances enumerated as susceptible of treatment by the present process, into two grand classes; thus—**First Class.**—Those ores or substances containing neither lime, baryta, strontia, or magnesia in the caustic or carbonated state, or in the state of sulphate. **Second Class.**—Those ores and substances which contain lime, baryta, strontia, or magnesia (more especially the latter), in the caustic or carbonated state, or in the state of sulphate.

The patentees subdivide each of the preceding classes into two orders:—**Order First.**—Those ores and substances which contain more than 25 per cent. of copper. **Order Second.**—Those ores and substances which contain less than 25 per cent. of copper.

All ores and other substances enumerated as susceptible of treatment by the present process, and which belong to class 1, may be treated according to the process No. 1, whether they belong to order 1 or 2.

Process No. 1.—Treatment of Copper Ores of the First Class.—The finely pulverised (fine dressed) ore is placed in a reverberatory furnace, known as a "calciner" (a furnace constructed according to Sheffield's patent, having air passing through openings in the bridge, &c., over the roasting ore in the furnace, is preferred), and exposed to a gradually increasing temperature, until it arrives at a full red heat. During the whole of the time it is in the furnace it is stirred from side to side, and from end to end, in order to expose the greatest possible surface to the oxidizing action of the heated atmospheric air passing over the roasting matter. This is to be continued until the ore ceases to smell of sulphurous acid. The heat is now to be increased as much as possible, taking care, however, that the heated ore does not in the slightest degree agglutinate (this point must be particularly attended to), the stirring all this time being constant. The object of the increased heat is the decomposition of the sulphate of copper formed during the earlier stage of the roasting. At the higher temperature this salt is decomposed, and its acid expelled—this may be facilitated by the addition of small quantities of any carbonaceous matter, as is already known. After it has been in this state about half an hour, a sample is to be taken out, mixed with a small quantity of water, and well stirred, allowed to settle, and the clear supernatant liquid poured off. If, on the addition of solution of ammonia, the liquid assumes a blue tint, or, on the addition of ferrocyanide of potassium, a reddish tint, the heat is to be continued for another half hour, after which time it is again to be tested in the same manner, and so on until no copper can be detected in the aqueous solution. The ore may now be drawn from the furnace, and is ready for the reducing operation, to be hereafter described.

Process No. 2.—For Ores and Substances of the Second Class, enumerated as susceptible of Treatment by this Process.—The finely pulverised (fine dressed) ore is to be roasted precisely as described for ores of class 1; but, before being ready for the reducing process, it has to undergo the following operation, which has for its end the separation of the sulphate of magnesia which has withstood decomposition (as before stated, the danger attached to the presence of sulphates of lime, baryta, and strontia is so small, that in practice it may be safely disregarded). The roasted ore, whilst as hot as possible, is conveyed into a tank, provided with a false bottom, containing a considerable quantity of water, and well agitated. After having remained in the water for about three or four hours, with occasional agitation, the water containing sulphate of magnesia in solution is run off from the bottom of the tank, and the ore thus washed allowed to drain as much as possible; it is then removed and dried, and is fit for the reducing process.

In case, however, the ore contains less than 25 per cent. of copper, it is thrown into a fusion, or "metal" furnace, with a certain quantity of lime or old slag, and the regulus so produced is run into sand moulds, or into water; but the patentees prefer to give the ore a partial roasting before forming a regulus, as in the following process:—

The finely powdered (fine dressed) ore is placed in the furnace ("calciner") already described, and exposed to a dull red heat, until very little or no more sulphurous acid can be smelt. The ore is then removed to another reverberatory furnace, known as a fusion or metal furnace, and

mixed with an appropriate quantity of lime, or lime and old slag, to form a fluid mixture when exposed to a sufficient temperature. When the whole is well fused, the furnace is tapped, and the regulus run into either sand moulds or water. The regulus produced by either of the preceding methods is reduced to a state of fine division, and in this state is roasted exactly as described for ores and substances class 1, process 1, after which it is ready for reducing.

Reducing Process.—The roasted ore, or regulus, is mixed with such a proportion of sand as will correspond to the amount of oxide of copper and oxide of iron in the substance. Thus, for a matter containing about 88 per cent. of oxide of copper and the remainder oxide of iron, from 35 to 40 per cent. of sand are required, with a sufficient quantity of lime or old slag as will cause the whole to flow freely. On adding the sand and lime, or the sand and slag, coal or other carbonaceous matter is to be added, in proportion of about $\frac{1}{10}$ th of the weight of the sand and lime, or sand and slag. When the whole is well fused, coal or other carbonaceous matter is to be added to the fused mass, and well stirred together; the heat is then to be increased for a short time, and the whole well stirred again. A portion of the slag is to be taken out, and examined by any method for copper; if but traces be present the operation is finished, and the furnace may be tapped; but if copper be present in quantity, more coal or carbonaceous matter must be added, and the mass must be again stirred, and so on until the slag is nearly free from copper, as above.

We claim the obtaining metallic copper from the ores, &c., of that metal by the processes hereinbefore described—viz.:

1. By effectually separating the sulphur from the metal by roasting, in the manner described under process 1, and by roasting and washing, as described under process 2; and when the ore is poor, by forming a regulus without the use of iron and alkali, and subsequently roasting, as is described under process 2.

2. By separating the iron from the mixed oxides resulting from the roasting processes, by the employment of siliceous and carbonaceous matters, as above described, for the purpose of obtaining the copper contained in such oxides in a pure state.

IMPROVEMENTS IN SMELTING COPPER.

SIR.—"Germanicus" states, in your last Number, that openings have been used of all kinds in furnaces, and that the patent of Mr. Low, specified 28th June, possesses nothing new. Will he do himself the justice to say in what works in England or Wales, and at what period, openings have been used, with the same object as by Low—viz.: to introduce a current of air upon the surface of the materials in fusion, by means of independent apertures to those that pass through the fire, and over the bridge of the furnace. I am aware they have been introduced to meet the flame near the bridge to effect a more perfect combustion of the products of the fuel, but let him show they have been directly used with the view to facilitate the oxidation of the sulphur compounds while in a state of fusion. I do not like that class of individuals who give no credit to others, but who are ever forward to deny a fair meed of praise where it is due.

July 13.

J. R.

ANTHRACITE COAL—COMPOSITION FUELS.

SIR.—I have read your correspondent's ("Carbon's") letter; and, being a proprietor of anthracite coal, must correct an error he appears to have fallen into—in stating that the quantity of the best coal worked, or capable of being worked, is barely sufficient to supply the demand for melting and hop-drying. Of course, the workers do not wish to overstock the markets, for this reason. I could point out to him collieries, producing the best coal, only working a tithe of what they could. As to there not being any quantity available for steam navigation, I could also point out to him, at the head of the Amman Valley, hundreds of acres of first-quality coal—the vein ranging near upon 5 ft. thick, yet untouched; and I still think that Mr. Leighton (whose opinions, by the way, are quite unchanged) will, if he lives a few years, see his ideas, as to its use for steam navigation, carried out. For our war steamers, in war time, I can see nothing better fitted, doing away, as his plan does, with such an obvious mark as a funnel—the loss of which, with ordinary coal, might be attended with the loss of the vessel. The Duke of Portland, in his late letters to the *Times*, quotes Sir W. Symonds' opinion on this point, making the danger of the loss of funnel a reason why a war steamer is not suited to close action. Your correspondent's remarks, as to the sulphurous nature of some veins, are quite true; therefore buyers should not, for the sake of a few shillings, purchase an inferior article, especially when it is to be used for any household purposes.

The reasons the better sorts of stone coal are not used in blast-furnaces are, too high cost; and, from their hardness, they creptate, and form too much dust, as, according to the present plan of furnaces, the coal is thrown right into almost the hottest place—the top of the furnace—where the gases meeting the air ignite. As to composition fuel, some trials have lately been made by Warlich's Fuel Company using the small of the best anthracite; and they found fuel prepared solely with this coal, manipulated according to their plan, to be a much stronger fuel than when made with other coal; but the cost is more, which, I fancy, is an impediment to carrying it out at present; at all events, it is a question of finance requiring consideration, though I cannot doubt but that its superior quality would bring a superior price. I think there can be no question but that the people of the north would have tried what "Carbon" suggests long ere this, had it been found to answer, instead of letting their small waste, or burn away on the bank.—K. Llandilo, July 11.

ANTHRACITE COAL—COMPOSITION FUELS.

SIR.—I admit the justness of some of "Carbon's" surmises. The vitreous character of the finest anthracite coal is the great obstacle to its use for smelting iron in blast-furnaces of the present construction. This substance is a very slow conductor of heat. When thrown at once into the burning gases at the open top of a furnace, the surface heats while the interior is still cold; the surface expands, and shivers off in small particles, presenting a fresh surface to shiver off as the former, and so on until the lump of coal is reduced to powder, and the coal having no binding property at all, it remains in that state, so blocking up the furnace. Some years since I contrived a cupola for melting iron with anthracite, on a new construction. In a former letter I referred to a transaction at the Gwendraeth Works, in connection with it and the South Wales Anthracite Association. Had that plan met with encouragement, instead of being, as it was, stifled by intrigue, an improved mode of smelting, adapted to the peculiarities and to the development of the extraordinary powers of anthracite coal, would long since have been in successful operation. I have devised different modifications of the principle of the cupola just referred to for smelting, but as these would all come under Player's patent, which will expire in a couple of years, as the prospects of the iron manufacture are at present gloomy, and as I have no immediate prospect of an opportunity for carrying this successfully out, I will hold my plans in abeyance, ready to take advantage of more favourable circumstances. The poorer veins of anthracite possess but little of this vitreous character, so that the coal bears the heat better, but the quantity of earthy matter it contains, and the absence of any binding property, occasions an accumulation of dust and small coal, so coated with earthy matter, as to render it incombustible, and, at the same time, infusible—nothing but dint of labour in poking and shovelling out can keep an anthracite furnace in working order, and to effect this an opening must be left, from which a body of flame is always issuing, attended, unquestionably, with great waste of heat and fuel. The best mode of using anthracite for smelting iron in furnaces of the present construction is to grind the culm, or small, of the purest coal, mix it with a due proportion of binding coal, and coke it. The strength and durability of anthracite, and the freedom of burning and cohesive properties of bituminous coal would be thus united in the same fuel. When the late Mr. Crane, the inventor and patentee of the present mode of smelting iron with anthracite, was conducting his experiments at Yniseddin, he found a mixture of coke and anthracite coal to produce a very much greater yield of iron from the furnace than he could get by the use of either fuel separately. In my opinion, the two combined into one fuel must prove more effective than the mere mixture of pieces. The fuel to which "Carbon" alludes, as composed of ground anthracite and tar, has acquired a most valuable property, wanting in anthracite, that of cohesion, or binding. It is the absence of this property which occasions all the difficulty in using anthracite. This compound fuel would be valuable and effective for smelting, but I suspect much too costly. Tar being a component part, there are many localities where a supply would be both expensive and difficult to procure. In using anthracite for steam-boilers and reverberatory furnace fires, with ordinary grate bars, the want of cohesion, or binding, occasions a continual dropping of partially burnt coal into the ash-pit, which causes a great waste of fuel. I contrived a grate to enable

me to use a blast with anthracite, and apply the heat of the bar to generate steam, with the view of increasing the gaseous action of the fire. This grate has a most extraordinary property of retaining the small of any coal, which will not bind in the fire, until all combustible matter is made use of. There is another remarkable circumstance attending the use of this grate. I found that a fire of small culm produced a much more intense heat than a fire of good sized pieces of coal, which I think may be satisfactorily accounted for. Anthracite coal burns only, and gives out heat, at the surface. Let us suppose a cubic foot of coal in one piece ignited; heat is given off from 6 square feet of surface, but break a cubic foot of coal into 1728 cubic inches, each would present 6 inches, and in the aggregate 72 square feet of ignited surface, or 12 times as much as in the one piece of a cubic foot. An attempt has been made to substitute steam for the water grate; but, although the results are, in every respect, similar, the effect is not equal in intensity of action, for which I cannot satisfactorily account. An improved system of coking seems on the eve of being introduced, which, in connection with compression, will prove, as "Carbon" terms it, the *ne plus ultra* in the preparation of fuel. I used to ridicule the idea of preparing composition fuels, but have latterly become a convert to a sense of its importance. The peculiarities of the Pembroke-shire anthracite attracted my notice long ago, and I shall intrude a little further, to state a theory by which I have endeavoured to account for the absence of pyrites, and the extraordinary vitreous structure of the coal. These beds of coal lie low, and are in the immediate vicinity of the sea, having Carmarthen Bay on one side, and Milford Haven on the other, the coal might thus be exposed, while hot, to the action of salt; this and pyrites would mutually decompose each other; chlorine and iron form a volatile body; the iron would thus pass off in vapour, while the sodium, sulphur, and earthy matter would act as a flux to vitrify the carbon. The Pembroke-shire anthracite has always been the favourite melting coal, because it gives out great heat with very slow combustion. In the north of England, and in the midland counties, coke is used for drying malt; in the southern and eastern counties, where fuel must be imported, anthracite is preferred on account of its greater durability; an anthracite fire will last all night, without being attended to, whereas a coke fire, on account of its light porous structure, requires feeding during the night. By an improved system of coking, compression, and the addition of a little clay puddle and salt, the small of bituminous coal alone, or with a mixture of non-caking or free-burning coal, would form a very good artificial anthracite.—T. H. LEIGHTON: July 9.

ON THE APPOINTMENT OF GOVERNMENT COMMISSIONERS.

SIR.—I have no doubt that you sympathise with me, and with all well-wishers to the mining interest, upon the defeat of Mr. Wyld's very sensible and unobjectionable bill, which was neither more nor less than to carry out the advice and reports of the Government commissioners who examined numerous collieries after recent dreadful explosions. And what is the pretext for this conduct?—viz.: that their own commissioners, appointed a fortnight ago, have not made their report. Why, Sir, the same excuse will equally apply for many sessions to come. Two commissioners, wholly unacquainted with practical mining, are sent to report upon what is right and what is wrong in the various complicated machinery of mining, the usages in one district totally varying from those of others, to unravel which would require the most proficient of colliery viewers, who might, indeed, weigh the reasons for and against each variety of practice, but not without laborious underground inspection, and the sagacious noising down of all the leading and especial circumstances—such colliery viewer having already qualified himself by scientific attainments, and by the laborious practice of his profession during many years. It is of no use mincing the matter, for by no other description of person is the subject capable of being satisfactorily reported upon.

The universal outcry of persons, both owners and workmen, is against the employment of the scientific and theoretic as inspectors; but, in the present case, the fears of the owners are set at rest by the understanding that their appointment means nothing else but a *go-by* to the stirring of these bills; for whatever be the result of the report of the Lords, still the inspectors will not have completed their investigation; and this will serve each succeeding session, unless the mining population band themselves together, and heap petition upon petition from all parts of the kingdom. But if, in the meantime, the needless destruction of human life progresses, as it has done of late years, does there no responsibility attach to persons in power? Undoubtedly there does; and although they possess the privilege of silencing earthly tribunals, they will, nevertheless, be made accountable to a tribunal elsewhere, if their conduct upon this occasion has the effect (which is undoubted) of immolating human beings at the shrine of private influence or unjustifiable obstinacy.

It is to be hoped that you will continue your watchfulness over the circumstances which are developed at each succeeding inquest, and endeavour continuously to force the subject upon the public attention, so that, in the very beginning of next session, it may be brought forward in the most formidable manner, and so consummate the desired object.

July 12.

JUSTITIA.

REMARKS UPON MINING.

SIR.—It is evident that your correspondent, Mr. Farley, is practically unacquainted with mining operations, or he would not have given publicity to such suggestions as appeared in the *Mining Journal* last week. I will, with your permission, make a few friendly remarks upon his letter. I was not before aware of any exclusiveness in mining operations existing in this district. Can there be anything hidden, or kept secret, when ground bailiffs are continually going into pits managed by other ground bailiffs—busties are often changing collieries and masters, and plenty of miners, that have worked in nearly all the pits in the district?

As to Government inspectors, I am of opinion that, if men of practical experience were appointed, they would be of advantage to the proprietor of mines; and the miner would have no objection to them paying attention to his safety. No person can tell at the commencement of a colliery what difficulties there are to contend against; therefore, it is utterly impossible to map out, or show how the mines will be worked or ventilated. He must first prove and examine his mine, and then shape his workings accordingly. As it respects the explosion at Friary Colliery, I believe it was satisfactorily proved to the jury at the coroner's inquest that there was sufficient air to ventilate the whole of the workings in the pit. The gas accumulated in the side of work where the explosion took place, in consequence of the air coming out of the head too soon—that is, the air escaped through, or over the dam, in the spot, and passed on to ventilate the other workings in the pit, leaving a part of the side of work beyond this spot without air, and here the gas lodged which caused the explosion. Had the dam been securely put in, the air would have been forced through another spot that was open, within a few feet of the stall face; had this been the case, the accident would not have occurred.

If Mr. Farley will explain to the proprietors of mines how they can draw as much out of a pit 3 or 4 ft. diameter, as one 7 ft., I have no doubt they will be much obliged to him, as it is evident that pits are not sunk 7 ft. diameter for ventilating purposes only. Again, there is great danger in having an excessive quantity of air in a side of work, is often a very great annoyance. There requires sufficient air to carry off all the gas that is produced in the mines; but not too much air, as it will assist the fermentation of the rubbish, and cause the side of work to be dammed up from "fire sink." I believe I have written sufficient to prove what I at the commencement asserted; and I shall be much obliged by your allowing these remarks to appear in your valuable paper.

Dudley, July 11.

PRACTICAL MINER.

LIGHTHOUSE ON THE GODWIN SANDS.

SIR.—It appears from an announcement in the *Times*, that another attempt is about being made to erect a beacon on the Godwin Sands, by piercing through the sand with small tubes, with the view of ascertaining their entire depth. The *Mining Journal* can attest that, in 1847, I was the first person who proposed to penetrate through these sands to the entire depth, and in the solid formation lay the foundation for a lighthouse, capable of resisting any storm. It is well known that I prepared "plans and sections" of the structure I proposed; and that these plans received the approbation of the highest engineering authority of London. These plans I laid before the Elder Brethren of the Trinity House, who, after some inquiries, stated that "they did not require any lighthouse on the Godwin Sands;" but the hon. secretary took care to detain the paper descriptive of my plans and project. The plans and sections I also exhibited before the members of the Royal Society, and other scientific personages, at the soirée given by the late president, the Marquis of Northampton; the project was by all parties there approved of. From these repeated attempts on the part of the Trinity House to erect a beacon on the Godwin

Sands, it is quite evident that a lighthouse is requisite; and on the plans of operation I proposed to pursue, a substantial lighthouse, which would resist every storm, might be erected for about 20,000*l.*, or at a cost less than that sustained by the shipping interest—say nothing of the loss of life—during the last year. But from what I can learn of the present attempt, and if it is the actual desire of the Trinity House to ascertain the depth of these sands and the nature of the formation below, why not sink, instead of a tube 2 ft. diameter, a cylinder of from 6 to 7 ft. diameter? When the cylinder has been forced through the sand as far as practicable by pneumatic pressure, the sand could then be taken out, and the nature of the strata below minutely examined, and operations for the erection of a lighthouse commenced accordingly, instead of squandering away public money with useless experiments. G. SHEPHERD, C.E.

Plymouth, July 9.

SOLUBILITY OF LEAD IN WATER.

Sir,—I was never so struck with the solubility of lead in water, and other fluids, as the other day. Having occasion for a large and regular supply of distilled water, I had fitted up a new still after my own method, with worm conductor, the pipe being made wholly of new lead. The apparatus being fitted and adjusted, the first portion came over perfectly bright and clear; but on taking it to pieces to refit, the next portion deposited an abundant white precipitate, which was thought to be produced by the steam cleaning out the pipe. It was accordingly taken to pieces, examined, fitted, and re-adjusted, the precipitate still forming. I was then induced to apply the usual lead tests to a portion of the distilled water, and, to my great astonishment, found it to be strongly impregnated, and that, too, in so short a time, and under circumstances apparently unaccountable. So convinced was I of the danger likely to result from the use of leaden pipes and vessels, that I immediately had the lead pipe replaced by one made of alloy metal, which produced very different results, as the water now came over absolutely pure. Whilst upon the subject of contamination of liquids by metals, more particularly lead, I might mention a circumstance which occurred to an individual who consulted me on the matter. It appears that gentleman was in the habit of drinking a glass of Seltzer-water, with a little brandy in it; this time, on the butler drawing the cork, and mixing the water with the brandy, a brownish black colour was instantly developed, with the exhalation of sulphuretted hydrogen gas, clearly showing that instead of Seltzer-water it was Harrowgate-water; and, moreover, it showed that the brandy itself was impregnated with metallic matter, and that, too, probably under similar circumstances as the distilled water before alluded to; hence the necessity which exists for the exclusion of lead in a pure, unalloyed, uncombined state, for pipes, pumps, and vessels generally, on account of its easy solubility. J. HORSLEY.

Ryde, Isle of Wight, July 12.

CALCAREOUS DEPOSIT IN WATER.

Sir,—Observing occasionally communications in your valuable paper on this subject, and having noticed that Mr. Horsley, of the Isle of Wight, has taken out a patent for a chemico-mechanical arrangement, whereby the impurities of water generally can be eradicated, I am induced to request the insertion of these few lines on the subject. I have a well 500 ft. deep in the London clay, producing an ample supply of water, and of which my occupation requires from 10,000 to 20,000 gallons daily. It would do me much service to be informed of a simple and efficacious manner to render this water what is termed *soft*, although at present it is far superior in that respect to the generality of spring water. I should feel greatly obliged to any of your correspondents for the desired information; and perhaps Mr. Horsley will inform me, through your columns, what he proposes to charge for a license for using his patented process. The following is an analysis of the water by Mr. R. Phillips:—One pint of this water contains—silica, $\frac{1}{4}$ gr.; carbonate of lime, $1\frac{1}{2}$ gr.; carbonate of magnesia, $\frac{1}{2}$ gr.; common salt, $2\frac{1}{2}$ gr.; sulphate of lime, $1\frac{1}{4}$ gr.; sulphate of magnesia, $1\frac{1}{2}$ gr.; sulphate of soda, $8\frac{1}{2}$ gr.; loss, and a trace of vegetable matter, $\frac{1}{2}$ gr. It will be seen from this, and what is singular for London clay water, that there is not a trace of iron in the analysis.—C. & B. S.: Oldford, July 11.

COMPRESSED-AIR LOCOMOTIVE FOR RAILWAYS.

Sir,—A notice having appeared in the *Mining Journal*, relative to Fell's Motive Power Company, of Cornhill, will you oblige me by inserting the following remarks. Though the writer gives a tolerable true description of the mechanical arrangements, still he overlooks, or at least does not name, the principal merits. Vacuum attempts must, I believe (as the patentees assert), in all cases prove a failure where any amount of power is necessary; whilst by this principle the power can be increased according to circumstances to any required amount, and is equalised throughout the entire length of the line—indeed, it is a succession of impulses of equal strength—every 22 ft. the locomotive-engine or truck has the perfect action of the steam locomotive, can be instantly stopped, backed, run into a siding, &c.; whilst in going down inclines, or stopping at stations, there is no waste of power (as by blowing off steam, or loss of vacuum), and during these periods the large station engine is still at work, increasing the power at all points of the line. This brings me to that part of the objection, which not only denies the possibility of one powerful steam-engine supplying 100 miles with the requisite motive power, but, in consequence of the assertion, is inclined to question every part of the arrangement—aye, even the practical pneumatic knowledge of the patentees! It would have been more modest and less invidious, if the writer had said what is really true—that pneumatic knowledge being comparatively all theory, he would give the patentees credit for a little judgment on the subject, and beg scientific readers to suspend their judgments till this company shall have demonstrated the matter practically, as proposed by their prospectus.

The great advantage to be derived by the railway companies will be a saving of 50 per cent. in wear and tear of permanent way and rails; whilst to the shareholders in Fell's Motive Power Company will accrue the immense profit of finding motive-power, and which, I am assured, can be done for less than 1*½*d. per mile, and the power laid down complete on a double line of rails for 2500*l.* a mile. The object of this company and the patentees merits public support and confidence; they propose to raise a sum of 5000*l.* to demonstrate this principle on the heaviest incline they can agree for; there is no profit or payment whatever to be made to the patentees for this section of 60 miles, granted to Mr. Andrew for a peppercorn per annum, who, on his part gives the shareholders 90 per cent. of the profits, or, in other words, reserves only 10 per cent. for his own share, as proprietor of the line. I have seen the model at work, and do entertain the most sanguine expectations of the success of the principle. That compressed-air is an effective locomotive power, has been proved in various instances; but the triumph now claimed to be attained is the perfect and continuous pressure throughout the length of the line, and the simple, but truly effective, means of taking the compressed-air from the vessels underground to the cylinders of the travelling engine. It requires to be seen to be truly appreciated, as no description can convey a just idea of its merits, both as to its power and simplicity of action.

Commercial Chambers, Gracechurch-street, July 12.

C. H. MAY.

RAILWAYS OVER MOUNTAINS.

Sir,—In your Journal of the 30th June, there is a communication from Mr. T. Deakin on this subject, in which he says "an ingenious arrangement is about being carried out in this neighbourhood (Blaenavon), which, if successful, will probably be followed in districts where a scanty population would not justify the costly expenditure in the formation of an ordinary railway. An engine is to be placed on the summit level of a road, cut over the mountain, between Blaenavon and Abergavenny, to draw up loaded carriages, &c., which will be allowed to descend on the other side by their own gravity, guided by the engine, which mode is expected quite to supersede the old road cut through the mountain." Unfortunately, Mr. Deakin's explanation of this scheme is so brief, as to give but a very imperfect notion of the mode by which this ingenious arrangement is to be effected; nor are the terms he uses sufficiently clear to enable your readers to comprehend his meaning. His letter is headed "Railways over Mountains;" and then he says the engine is to be placed on the summit level of a road cut over the mountain, which is to supersede an old road cut through the mountain. Whether he intends to form a road or a railway, it is impossible to determine. Be it the one or the other, it is not difficult to show that any such scheme requires mature consideration, and that its expediency is very questionable. Although confessedly ingenious, there is no originality in the plan, as it has been pursued on railways in different parts of the country for about half a century. There is, therefore, no want of data derived from experience by which we can test the value of "the arrangement" proposed by Mr. Deakin; and from this source we have learnt that, even on railways, with a large and constant traffic, sta-

tionary engines are very expensive; and that where the tonnage is considerable and uncertain, or varying in amount, they are very little cheaper than horse-power. The traffic anticipated to pass over this mountain, will be of the latter description; whilst the expenses will be constant. Wages, coal, oil, wear of ropes and machinery, depreciation and interest of money invested, will be nearly the same for 100 tons as for 5 tons per day, as the engine must always be kept in a working state, whether there be much or little for it to do; and the ropes, or chains, rolleys, &c., are constantly depreciating, whether used or not. Supposing that a railway be adopted, the difficulty of reciprocating with common roads will make it almost impossible to convey even a very moderate amount of traffic in this way, without a very great loss of time and power. There are numerous practical obstacles, in short, to the success of such a scheme, even were a railway adopted; and these will be greatly increased if it be meant to employ the power of a stationary engine on a common road.

Unless the "ingenious arrangement" alluded to by your correspondent be some new method of so applying steam-power, which is not stated, and of which we are ignorant, there is nothing in the plan proposed to justify a reasonable expectation of its success. On the contrary, so far as experience goes, we may safely anticipate that it will neither effect a saving of time and money in the conveyance of traffic, nor reimburse the parties who may invest their money in it. The sole merit of the project, therefore, rests on something unexplained; and of the feasibility of which we are in profound ignorance. The known ability of your correspondent, however, induces a confident hope that the difficulties to be encountered will be amply provided for by the resources of his ingenuity; and it is to be regretted that the scheme as propounded should be so imperfectly explained as to induce unfavourable opinions of its merits, which a full development might have modified, and possibly have altogether prevented. Neath, July 6.

J. RICHARDSON, C.E.

RAILWAYS OVER MOUNTAINS.

Sir,—Mr. Deakin, in a letter dated the 25th June, states that "an engine is about to be placed on the summit level of a road cut over the mountain between Blaenavon and Abergavenny, to draw up loaded carriages waggons, &c., which will be allowed to descend on the other side by their own gravity, guided by the engine, which mode is expected quite to supersede the old road cut through the mountain. If this plan is found successful, and here the opinion is, that it will, &c." For the information of Mr. Deakin, and all whom it may concern, I beg to inform them, through the medium of your Journal, I adopted the same principle, with every satisfaction, more than 30 years ago, and it has been in use on a large scale for some years past, with equal success, at the Bowling Iron-Works and Coal Mines, near Bradford, in this county. HENRY HARTON.

Bamforth Hall, Rotherham, July 12.

FOURDRINIER'S PATENT SAFETY APPARATUS, FOR PREVENTING ACCIDENTS IN MINES AND COLLIERIES.



By the adoption of this invention the lives of the working miners may be preserved, and the property of the mine owners protected from the serious consequences of the following accidents:—

1. From the men or load being precipitated to the bottom of the shaft when the rope or chain breaks; in this case the apparatus is self-acting.
2. From either the men or load being drawn over the pulley; in this case also the apparatus is self-acting.

The apparatus is readily applied to the present guides now in use, whether they be of wood, iron rods, or chain, and may be attached to the cage in a few hours.

By reference to the annexed sketch it will be seen that the apparatus is fastened upon the guides by the rope being represented as broken, but when the rope, or chain, is tight, and the cage in work, the levers are raised on their fulcrum, and lower the wedges in the tapered shoes, which slackens them on the guides; and when the rope, or chain, becomes broken or detached, the levers drop and raise the wedges into the tapered shoes, and consequently grip the guides firmly on both sides, so that the greater the weight in the cage the tighter the wedges hold.

To obtain any further information, application may be made to Mr. Joseph Fourdrinier, 9, College-place, Camden Town, London, who is authorised by the patentee, Mr. E. N. Fourdrinier, to grant licenses for the use of the patent.

On an Equation between the Temperature and the Maximum Elasticity of Steam and other Vapours. By W. J. M. RANKINE, C.E. Edinburgh: Neil & Co.

In the present age of research after the most economical means of obtaining motive power, every species of investigation and experiment is worthy the consideration of the scientific world. The little brochure before us is the reprint of a paper from the *Edinburgh New Philosophical Journal* for July, by Mr. Rankine, the engineer, in which the author has given the results of his investigations, founded on a peculiar hypothesis respecting the molecular constitution of matter; an equation giving a very close approximation to the maximum elasticity of vapour in contact with its liquid at all temperatures which usually occur. Formulas are given, calculated from the experiments of Regnault and Dr. Ure; the latter of which, for turpentine and petroleum, he states are so irregular, that the value of a constant element cannot be determined with precision. By his own researches he has arrived at formulas easy and expeditious in calculation, giving accurate numerical results, and which he considers will be practically useful. The calculations are for steam, vapours of alcohol, ether, turpentine, petroleum, and mercury.

GAS-LIGHTING: ITS PROGRESS AND PROSPECTS.*

The question of the manufacture and supply of gas to the public having of late caused considerable excitement among consumers, both on a large and small scale, we are happy to find that a work on the subject has just been published by Mr. J. W. Parker, West Strand, tending to give correct information on all its details, and set at rest those conflicting statements with which the press has been deluged for many months past. Those who wish to become acquainted with the mysteries of gas production, and the several details connected with its cost, its profits to shareholders, its various elements of loss, and the several kinds of information necessary for successfully conducting a gas establishment, should consult Mr. Parker's work, which is evidently the production, not only of an engineer who has made the manufacture of gas his peculiar study, but of one who has not been content with skimming the surface of the science, but has delved into its most hidden recesses, and separated and arranged successfully its various elements, by which a host of fallacies which have of late found place in the public journals will be exploded, and more correct and general information on the subject be disseminated. To allow our readers to form a judgment as to the correctness of these introductory remarks, rather than carry our own observations to an unnecessary extent, we shall lay before them a few extracts, which, while they give an idea of the utility of, and correct information conveyed by, the contents, will be convincing of the capability of the author for the discussion of this particular subject. After a history of the introduction of gas by Murdoch, in Cornwall, as a toy, 60 years since, its gradual development, the mistakes made, the vast sums of money wasted, and years of energy, skill, and toil passed unrewarded, and concluding that the science has not even now attained to the degree of perfection of which it is susceptible, he gives some excellent advice and information on the general business of a gas company, the meter makers, gas fitters, and others. On the present prospects of gas-lighting, he says:—

"The prospects of gas-lighting are brightening. 'A good time is coming.' Never mind discussions and inquiries. They will do no harm. They may occasion a little temporary excitement, but in the end much good will be gained by all that is now going on. Where there is nothing wrong, and nothing to conceal, there is nothing to draw from exposure. An affection of mystery is sure to excite suspicion. It had been better if there had been less of this in former days. If gas companies make a good use of their present opportunities, they will acquire a popularity and a stability which they have never before enjoyed. There is no class of capitalists more liable to have their fears wrought upon than gas proprietors. This is chiefly to be attributed to the small amount of information which they possess as to the nature and the extent of the business in which their property is embarked. It is not to be expected, neither is it necessary, that they should understand the details of the manufacturing and distributing processes. Such matters are better left to the care and management of those to whom they properly belong. Gas proprietors should cultivate a good understanding among themselves. They should possess authentic intelligence about inventions or occurrences which are likely to affect their interests. They should know more, than appears to be generally known by them, about the number of gas establishments, the magnitude of their operations, the amount of capital invested in them, and the rates of interest paid thereon. This kind of information would naturally lead to inquiries as to the prices of gas in various parts of the kingdom, the reasons for its being greater in some localities than in others, and in small towns than in large ones. The possessors of this kind of knowledge would have more correct views of the value of their respective properties, they would have clearer perceptions of the position and prospects of gas-lighting, and, by looking further ahead, would be the better prepared for approaching changes. They would learn that gas-lighting is rapidly extending, not only by its entering upon new fields of enterprise, but by greater skill and diligence being applied in cultivating the ground already occupied. If there be less necessity for new works, it is gratifying to know that, in almost every populous town and district, the old ones are undergoing frequent alterations and enlargements; the quantity of gas now required being three times, and in some places four times, as great as it was seven years since. These are the materials which constitute the statistics of gas-lighting, and which at present are little more than rough guesses. If there were less reserve and jealousy in commercial information, there would be less difficulty in collecting and arranging it. Selfishness and exclusiveness have been tried. They have done no good. It is not desirable that we adopt a more liberal system, whose chief element is truth, and whose sole object is good will."

The following statistics are interesting:—

"The number of proprietary gas-works in England and Wales is—say 560, and in Scotland and Ireland, 176. There are about 45 others, of which 33 are believed to belong to private individuals, and the remainder to parochial or municipal bodies. These make a total, for the United Kingdom, of 775 distinct establishments for the manufacture and sale of gas, and which are considered to represent a capital of 10,500,000*l.* The dividends may be quoted at all rates—from none at all, to 10 per cent.; the average being a little over 5 per cent. The quantity of gas produced annually—say in 1848, may be taken as equal to about 9,000,000,000 (nine thousand millions) of cubic feet; the coal required for that quantity being 1,125,000 tons. After allowing for waste and leakage, the quantity of gas actually sold is about 7,200,000,000 (seven thousand two hundred millions) of cubic feet. These quantities, and the terms in which they are expressed, are but imperfectly understood by persons not practically acquainted with the subject. It may help a little to illustrate the matter, by mentioning that a gas-holder capable of containing the quantity first quoted would require to be two miles in diameter, and 103 feet in height. The light produced by the last quoted quantity of gas, being that sold, is equal to 342,857,143 (three hundred and forty-two millions, eight hundred and fifty-seven thousand, one hundred and forty-three) candles, or 153,061 tons of mould candles of six to the pound, and which would cost 11,428,571*l.* Compared with sperm oil, the quantity of that article required to yield the same light, would be 33,183,540 gallons; costing, at 8*s.* per gallon, 13,253,456*l.* The average price realized by the gas companies, for all the gas sold, including that supplied to street-lamps, is, I believe, less than 4*s.* 6*d.* per thousand cubic feet. Taking it at that price, the sum charged for the same would be 1,620,000*l.*

"The number of men occupied in the manufacture of gas averages about 6000; and more than double that number obtain by it in various ways, constant employment, making a total of about 20,000. This does not include, probably, an equal, if not greater, number engaged in mines and iron-works, and in numerous processes which have had their origin, and are kept in motion, by this branch of domestic manufacture."

Repeating the numerous improvements suggested by theoretical writers, which may be accomplished in the manufacture and supply of this now necessary article of commerce, he clearly shows that while many things are highly desirable which are impracticable, so it is a common mistake with theorists or amateurs to confound possibilities of philosophy with the possibilities of commerce, and that many of the proposals for gas improvements are of this nature. For the encouragement of parties peculiarly connected with gas companies, we give one concluding extract:—

"The science of gas-lighting is not what it should be, nor what it is destined to become. Early indiscretions are not soon forgotten, nor are their effects easily shaken off. Selfishness on the one hand, and speculation on the other, have been heavy clogs. With the best of intentions, and the brightest of prospects, when the ground is untrodden, the abject of men are generally the most cautious. A cautious course may, for a time, be the safest; but caution and timidity must not be confounded. Amidst the changes which are in progress, and the new light which is breaking in upon trade and manufactures, something must be ventured, or nothing great will be achieved. There must be confidence as well as hope—effort as well as expectation. In gas-lighting, low prices, within safe commercial limits, are the secret of success. Of this, the examples are so numerous, and the illustrations so decisive, that they all point in the same direction. There is no longer either occasion, or excuse, for doubts, and fears, and forebodings. Those who were most frightened, acknowledge that they have been more frightened than hurt; and others, who were very lately brooding over anticipated losses, have begun already to reckon their gains."

The volume concludes with a note on the electric light, in which he shows that although some improvements have been made towards adopting it commercially, its progress is very slow; and that as respects usefulness, nothing definitive seems yet to be accomplished. That although a light of dazzling brilliancy can be obtained for a few moments, its intermittency and uncertainty are fatal to its use, and that at present there appears no signs of success in securing the necessary self-adjustment of the carbon points, which must be accomplished before it can be adopted as a means of artificial illumination.

* Gas-Lighting: its Progress and its Prospects; with Remarks on the Rating of Gas-Mains, and a Note on the Electric-Light. By J. O. N. RUTTER, F.R.A.S. London: John W. Parker, West Strand.

THE NEW HYDRO-CARBON GAS.—An apparatus for the manufacture of this new gas has been fitted up at Parkhouse, and we have been favoured with the following description of it by Dr. Kinloch. It seems well worthy of public attention. After giving an account of the mode of manufacture, he proceeds to speak of its merits in the following terms:—"The advantages it possesses over coal gas are,—1st, its cheapness, as it seems pretty evident that, should resin continue at its present price, it may be manufactured at a prime cost of about 1*s.* 3*d.* per thousand cubic feet, on a large scale; it is, of course, more costly—say 2*s.* per thousand cubic feet—when made in a small quantity.—2nd, The simplicity of its manufacture, as any labourer of ordinary capability can attend to it, there being nothing more requisite than to adjust the apparatus, which feeds the retorts with the water and resin, and keep up the furnace fire, the requisite temperature not being so great as that required for the decomposition of coal.—3rd, No purifying apparatus is needed, the only product being resin oil, which escapes at the hydraulic main, and when coal is returned into the retort and again used for producing gas. It has a pungent ammoniacal odour, not unlike common coal gas, and its illuminating power is about 20 per cent. superior to coal gas.—4th, The small space requisite for the retorts, as an apparatus quite sufficient to supply one hundred cubic feet of gas per hour, will not occupy more space than four feet square. The gas made at Parkhouse has a specific gravity of 936.0, and shows an illuminating power superior, as compared with the Aberdeen coal gas, of 33.1 per cent. With the chlorine test it shows an illuminating power of 28, while the Aberdeen gas shows only 14; and its durability, burning at 7-10ths of an inch pressure, is 82.30 to 61.41 Aberdeen gas. The products of the two retorts are presumed to be—mechanically, not chemically—combined; they, however, do not separate again. It may be as well to add that gas of the specific gravity of 936.0 would cost rather more than is stated above; but that is quite too rich for general use. The above observations being the result of many careful experiments, conducted by a professional gentleman of high standing and position, and the proprietor of large estates in Aberdeenshire, must carry great weight, and bear certainly a very high testimony from a gentleman daily using Mr. White's gas himself at the other extremity of the kingdom. We understand it may be seen in Manchester, at Parr, Curtis, and Matley's works, near Store-street; or at Hall and Wilson's, King-street. We understand Mr. White has just finished lighting up the Broad-plain Soap-works, Bristol (the largest in the kingdom), and is now in London, erecting his apparatus in the extensive works of the South Metropolitan Gas Company, after which, those of Messrs. Solwabe and Co., at Rhodes Print-works, near Manchester, and the town of Southport, will follow in rapid succession. The public will, therefore, speedily have an opportunity of satisfying themselves.—North of Scotland Gazette.

RIDERS' RAILWAY BRIDGE.

—This BRIDGE, BUILT wholly of IRON, will be ERECTED by the PATENTEE on the following terms:—
A BRIDGE, of 160 feet span, for a double track railway, broad gauge—Price £2000.
A BRIDGE, of 100 feet span, same dimensions—Price £1600.
These prices are exclusive of abutments or piers.
ROADWAY BRIDGES at a reduction on cost of from one-half to two-thirds.
Apply to Mr. S. MOULTON, Patentee, Bradford, Wills, or to Mr. Howard Jacobson, Suffolk-lane, Thames-street, London.

INDURATED AND IMPERVIOUS STONE, CHALK, &c.

—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHINSON'S MATERIALS—hard as granite, impervious to moisture, vermin, &c.: the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.
Apply to HUTCHINSON & CO., Ltd.,
East Temple Chambers, London, or Tunbridge Wells, Kent, stating name, address, and capital at command.
N.B.—Houses cured of damp. The produce of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c.
LICENSEES GRANTED.

OVERLAND GOODS AND PARCELS FOR INDIA.

To Aden, Ceylon, Madras, Calcutta, Singapore, China, and Bombay, should be delivered not later than noon, on the 17th of each month; and, if forwarded on the 18th, will be subject to an extra charge.
When the 18th falls on a Sunday, no packages will be received after the 17th; and cases must not exceed 70 lbs. in weight, and, when measuring over 1 cubic foot, they must be strong, and well hooped at the ends.
Peninsular and Oriental Steam Navigation Company's Offices,
122, Leadenhall-street, London, July 12, 1849.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular

MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY

BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta; thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—Malta—On the 20th and 29th of every month. CONSTANTINOPLE.—On the 20th of the month. ALEXANDRIA.—On the 30th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th, 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and, 57, High-street, Southampton.

PATENT TOUGHENED CAST-IRON.—Messrs. GARDEN

and MACANDREW beg to call the attention of Architects, Builders, Engineers, Ironfounders, &c., to the ABOVE DESCRIPTION of IRON (Mr. Morris Stirling's Patent), which, after numerous trials, experimental and practical, is found greatly to exceed all other cast-iron in tensile and transverse strength, as well as in resistance to crushing forces. Several of the most extensive ironmasters have been licensed, and from them, or their brokers, the patent iron can be procured.
Messrs. GARDEN & MACANDREW have always a STOCK of this IRON in PIGS, and are ready to EXECUTE ORDERS to ANY EXTENT, on the shortest notice.
27, Queen-street, Cheapside, April 25, 1849.

CWMRAIN PATENT IRON REFINERY.—The

PROPRIETORS of IRON FORGES and MILLS are respectfully INVITED to MAKE TRIAL of MR. BLEWITT'S REFINED IRON, or METAL, PREPARED by a NEW PATENT PROCESS.

whereby the IRON is completely FREED from the IMPURITIES contracted in the BLAST-FURNACE, and, by judicious mixtures, rendered applicable to every kind of manufacture. Heretofore, the metal usually sold in the market has been produced from the worst pigs, scraps, and refuse of some particular blast-furnace, or set of furnaces, without any mixture, or any regard to quality, or the purpose for which it might be required. The PATENT METAL is PREPARED on SYSTEM, and TO ORDER, for any of the following purposes:—

1. For BOILER and RANK-PLATES.
2. For TIN-PLATES, commonly called COKE-PLATES.
3. For STRONG CABLE BOLTS, RIVET, and ANGLE IRON.
4. This COMPOUND PUDDLED, beat under the hammer into a bloom, reheated, and rolled into a 6 or 6½-inch bar, makes TOPS and BOTTOMS for FLANCH and OTHER RAILS, of very superior quality, and attended with less waste than any other kind of iron used for that purpose. It is also well adapted for nail-roads, horse-shoes, and for other ordinary uses of the blacksmith.

The PATENT METAL is marked with a squirrel, and the initials "R. J. B."

and is to be had only at the "Cwmrain Iron-Works," near Newport, Monmouthshire

PATENT IMPROVEMENTS IN CHRONOMETERS.

WATCHES AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and His Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1866, 1868, 1842. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, on £5 to £10 extra. Gold horizontal watches, with gold dials, from 8s. to 12s. each. DENT'S PATENT DIPLIODESCOPE.

or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use, 1s. each, but to customers gratis.

IMPORTANT TO MINE OWNERS, &c.

GUTTA PERCHA COMPANY—PATENTEES,

CITY-ROAD, LONDON.
The GUTTA PERCHA COMPANY beg to bring under the notice of Mine Owners, Manufacturers, &c., the GREAT SAVING, both of time and expense, which is effected by the use of the GUTTA PERCHA PUMP BUCKETS and VALVES. These Buckets may be had of any size or thickness, without any seam or raised joint. They are unaffected by acids, alkalies, &c. Cold water will never soften them, and they are, consequently, much more durable than leather, and also cheaper. The most gratifying testimonials have been received from millowners, who have had these Buckets in operation for several months past, without the slightest repairs being required.

GUTTA PERCHA TUBING

Being so remarkable a CONDUCTOR of SOUND, is now being extensively applied for CONVEYING MESSAGES from ONE BUILDING, or PLACE, to ANOTHER. If a Tubing of this material, 1 inch diameter, be carried from the mouth of a mine, or pit, down the shaft, to various parts of the mine (no matter whether a quarter or half a mile distant), an instant communication may be established by means of the whistle, on Whistlaw's principle, and a conversation carried on as distinctly as though the parties were but a few feet from each other. When these Tubes are in general use, they will greatly lessen the loss of life in mines.

GUTTA PERCHA DIVING BANDS

Continue to secure a continually increasing demand; they can be had of any size or length. Their durability and strength, permanent contractility and uniformity of substance, their non-susceptibility of injury from contact with oils, grease, acids, alkalies, or water, and the facility with which the only joint required can be made in bands of from 200 to 200 feet long, render them superior for almost all working purposes, and decidedly economical.

GUTTA PERCHA SOLES for Boots and Shoes, Bows, Buckets, Picture Frames, Brackets, Mouldings, Surgical Instruments, Vases, Cups, Inkstands, Balls, &c., may be had at the Company's Works, Wharf-road, City-road, London, or of any of their wholesale dealers in town or country.

HOUSE PAINTING WITHOUT SMELL.—Use the

SWEET OIL of TURPENTINE, as certified by Dr. Serny. It goes further, dries quicker, lasts longer, adds to the brilliancy of colours, and prevents many ill effects too often consequent in the use of the old turpentine. Sold in bottles from 6d. to 2s.; per gallon, 6s.—Bottles, packages, and looking, on one or two gallons, charged 1s. 6d. per gallon; on three or more gallons, 1s. per gallon extra.

Post-office orders to be made payable to THOMAS BARKER, at the Sweet Oil of Turpentine Company's Depot, Bream's-bulldings, Chancery-lane.

CONTRACTS taken by the company at the usual prices of painting.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Buddle's West Hartley 13 6—Carr's Hartley 13 9—Chester Main 14 3—Hastings Hartley 13 6—New Tanfield 12 6—Ord's Redhugh 13—Tanfield Moor 13—Tansfield Moor 13 6—Towley 13 6—Walker's Primrose 12 9—West Hartley 14 6—Windsor's Fenslop 12 6—Wylam 13 9—Wall's End Gosforth 15 9—Gibson 15 3—Percy 15—Eden Main 16—Lambton Primrose 16—Bell 16—Belmont 16 6—Hetton 17 6—Haswell 17 6—Lambton 17—Lumley 16 6—Thorpe 16—Condon Town 15 6—Denison's 15 3—South Durham 15 6—West Cornforth 15 6—Cowpen Hartley 13 9—Derwentwater Hartley 13 6—Ships at market, 72; sold, 45.

WEDNESDAY.—Buddle's West Hartley 13 6—Carr's Hartley 13 9—East Adair's Main 12 6—Hastings Hartley 13 6—New Tanfield 12 6—Ravenworth West Hartley 12 6—Tanfield Moor 13 6—Walker's Primrose 12 6—Eden Main 16—Wall's End Bell 16—Stewart's 17 6—South Hartlepool 15 9—Thorpe 16—Whitworth 15 9—Condon Town 15 6—Cowpen Hartley 13 9—Ships at market, 94; sold, 30.

SATURDAY.—Buddle's West Hartley 13 6—Carr's Hartley 13 9—Adair's Main 12 6—Hastings Hartley 13 9—Holwell Main 14 6—New Tanfield 12 6—Ord's Redhugh 13—Ravenworth West Hartley 13 6—Tanfield Moor 13 6—Walker's Primrose 12 6—Wylam 13 9—Wall's End Hedley 15 6—Urpeth 13—Wharfedale 15 3—Eden Main 15 9—Belmont 16—Bradley 16—Haswell 17 6—Lumley 17—Morris 15 3—Stewart's 17—Whitwell 13—Caradoc 15 9—Hartlepool 17 6—Heugh Hall 15 9—Kellon 16 3—South Hartlepool 15 9—Thorpe 15 9—Whitworth 13 9—Aldcliffe Toss 16—Condon Town 15 6—Denison 15—Tees 17 3—West Cornforth 15 6—Derwentwater Hartley 13 9—Ships at market, 127; sold, 71.

DELIVERY OF COALS IN THE PORT OF LONDON IN THE MONTH OF JUNE.

Newcastle	14,675
Sunderland	7,213
Stockton, Middlesbrough, &c.	51,627
Blyth	10,024
Scotch	49
Wells	11,069
Yorkshire, &c.	2,345
Small Coal	169
Cinders	1,073
Total	265,584

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending July 7 was—No. of passengers, 14,976.—Amount of money, £42 8s. 6d.

SEA, FIRE, LIFE ASSURANCE SOCIETY,

UNITED WITH THE

PORT OF LONDON ASSURANCE COMPANY,

Incorporated pursuant to Act of Parliament, April 22, 1847.

Admitted to Lloyd's by the Committee, January 15, 1848.—Amalgamated pursuant to Resolutions, dated February 5, 1849.

INCORPORATED BY ACT OF PARLIAMENT, Capital £100,000.

OFFICES, 31, CORNHILL, LONDON (opposite the south side of the Royal Exchange).

UNITED BOARD OF MANAGEMENT.

TRUSTEES AND DIRECTORS.

JOHN BENNETT, Esq. GEORGE HELMORE, Esq.
THOMAS BUNTING, Esq. Sir WILLIAM A. OGILVIE, Bart.
ALEXANDER DAVIS, Esq. FREDERICK W. YATES, Esq.
JOHN KELLAND DURANT, Esq. W. YATES, Esq.

JOHN WREFFORD, Esq.
With power to add to their number.

Managing Director—Augustus Collingridge, Esq.

Underwriter—John Powis, Esq., Member of Lloyd's.

Auditors—Mr. William Paul Mitchell, 20, Parliament-street, Westminster; Mr. Henry Hawk, Ely, Cambridgeshire.

Bankers—Messrs. Currie and Co., 25, Cornhill.

Solicitor—John Chapple, Esq., No. 70 A, Abchurch-lane.

Medical Referee—Augustus Cooper, Esq., M.R.C.S.

Actuary, Life Department—Mr. Alfred Bart.

Superintendent, Fire Department—Mr. John Nelson.

Surveyor of Buildings—Jackson Barwise, Esq.

The capital of this company, in lieu of being fixed at some purely nominal amount, having no reference, and bearing no relation to the proportion paid up, consists (with powers of extension reserved to the proprietors, under the 16th clause of the Deed of Settlement, at a general meeting) of £100,000, divided into One Pound Shares, all paid, transferable at the pleasure of the holder, and bearing a guaranteed interest of Five per Cent. per Annum, receivable half-yearly, irrespective of further dividends accruing from the sources of profit opened by the proprietary branches of the business. By this arrangement, while the shareholder is exempted from liability to indefinite contributions at uncertain intervals, the assured is secured the corresponding benefit of ascertainable available funds, in no way contingent on the necessarily doubtful nature of "calls," which experience has always shown, are least likely to be responded to when most required.

FIRE DEPARTMENT.

The Rates on Fire Risks have been based on statistical calculations, prepared with the greatest skill and accuracy, which warrant the directors in making such alterations with respect to houses brought within scope of the enactments of the Building Act (7 and 8 Vic., cap. 84), for which no office hitherto in existence has made the slightest abatement in return for the diminution of hazard, as afford perfect security to the public, at a considerable reduction in point of cost to the assured.

CLASS I.—ANNUAL PREMIUM OF (not exceeding) ONE SHILLING PER CENT.

All buildings erected in conformity with the Building Act, 7 and 8 Vic., cap. 84.

CLASS II.—ANNUAL PREMIUM OF (not exceeding) ONE SHILLING AND THREE-PENCE PER CENT.

All household goods, merchandise, and stock, not hazardous, in brick, or stone buildings, as described in Class I., and in which no hazardous trades are carried on, or hazardous goods deposited.

CLASS III.—ANNUAL PREMIUM OF (not exceeding) TWO SHILLINGS PER CENT.

Buildings of brick and stone, covered with slate, tiles, or metal, wherein no hazardous trades are carried on, and no dangerous goods being stored in community with the Building Act, 7 and 8 Vic., cap. 84, but otherwise approved upon survey.

EXTRA HAZARDS altogether excluded, and returns of profits to the assured made very fifth year.

LIFE DEPARTMENT.

ASSURANCE ON LIVES, ENDOWMENTS, AND REVERSIONS, AND PUBLIC GUARANTEE, UNITED WITH LIFE ASSURANCE.

Established upon the principle of Mutual Life Assurance, the whole of the profits being divisible amongst the assured.

ALL LIFE POLICIES INDISPUTABLE, AND ASSURED FREE OF STAMP DUTY TO THE ASSURED.

THE ASSURED PROTECTED BY A GUARANTEE FUND OF £100,000.

The life branch of this society is established by persons connected with that large and influential body of individuals—the mining interests of England and Wales—a class of upwards of 2,000,000, and whose annual returns of capital approximate to £40,000,000 sterling. As life assurance has been extended, the various classes of the community have embraced the advantages of establishments of their own, adapted to the peculiar circumstances of those classes, with which they are respectively connected.

It is, however, remarkable that while in the metropolis alone the life assurance companies of all classes and descriptions exceed 100 in number, with engagements computed at upwards of £115,000,000 sterling, those companies do not comprise one emanating from the mining classes, or embracing those interests which have done more than any other to develop the resources, and promote the extension, of the commerce of the country. So long, then, as this important and influential class of the community possessed no assurance of security for their families, and their pecuniary interests, it is manifest that an extensive system of life assurance remains yet to be accomplished.

The individuals directly interested in, or connected with, mining property in this kingdom, are more numerous and not less wealthy than the members of the clerical, medical, and legal professions, now represented by not fewer than nine assurance companies; and it is calculated that the proprietors, agents, and those immediately or indirectly interested, represent an amount of population, and of fixed property, nearly equal to that of all the other classes of the kingdom having representative assurance institutions.

This extensive and wealthy interest is, therefore, unquestionably adequate to sustain a prosperous assurance society, adapted for securing the advantages of life assurance to the numerous individuals of which it is composed; and for this purpose the life branch of

"THE SEA, FIRE, LIFE ASSURANCE SOCIETY"

has been established, not only for the immediate benefit of these interests, but for those of all other classes, whether in the medical, legal, clerical professions, the army, navy, or any other station of life, on equal terms, and will afford the utmost advantage that can be derived from life assurance.

Mutual assurance is the best mode by which this object can be attained; it is distinguished from the proprietary principle in distributing the surplus profit ratably and equally among the assured only; whilst in proprietary companies the shareholders are a permanent body, among whom a considerable portion of the profit is divided.

The experience of nearly a century has demonstrated that mutual societies are not only perfectly safe, but, when prudently managed, yield large profits to policy holders, without the aid of a permanent subscribed capital.

Mr. de Morgan, one of the most competent authorities on life assurance, says:—"A mutual society is one in which the members stand equally related to each other, and constitute the company themselves. In such a company no capital is, generally speaking, raised at the outset, except, perhaps, a small sum for necessary expenses at starting."

And again: "They have no capital except what arises from their own accumulations, and they are not liable to the payment of the interest of all engagements. The risk, however, even at the commencement, is not great in character, and is small in amount; and the quantity of risk diminishes so much faster than the amount increases, that it may be safely said there is nothing in the commercial world approaching, even remotely, to the security of a well established and prudently managed mutual assurance society."

As, however, there may be a portion of the public not yet fully convinced of the complete security afforded by purely mutual life companies, the life assurance department of this society has been formed upon a plan which unites all the advantages of a purely mutual with the security of a permanent fund, giving to the assured ALL THE SURPLUS PREMIUMS, AND THE AID OF AN AMPLIFIED PAID UP CAPITAL, AS A GUARANTEE FUND, to secure the prompt payment of any policies which may become early claims on the society.

ALL LIFE POLICIES INDISPUTABLE.

The chief obstacle to the progress of life assurance is, that an error in a policy, which may have arisen from mistake, misapprehension, or unintentional neglect on the part of the assured, or of the office, has the effect of vitating the policy.

One of the most important objects of this society is the removal of the risks which have hitherto attended the rights of policy holders by insuring the certain payment of every life policy as it becomes a claim.

All questions as to age, health, habits, employment, residence, health of relatives, and other matters deserving of inquiry prior to the contract being granted, are held as finally settled when the contract is granted, and no further inquiry is permitted.

Every policy issued by the life department of this society will be absolutely indisputable; and the effect of issuing the same shall be conclusive evidence of the validity of the policy, and the amount assured will be paid within three calendar months after proof of the death of the assured; and a clause has been inserted in the policy deed prohibiting the society from disputing any life policy which shall have been granted—a condition which renders the policies of this society more than ordinarily valuable as family provisions, or as negotiable instruments of security in pecuniary or loan transactions.

THE CONSTITUTION OF THE SOCIETY.

The society is established by Act of Parliament. The funds of the society are vested in trustees. The affairs of the society are managed by a board of directors elected by the shareholders. The accounts of the society are audited annually, by not less than two auditors.

A general meeting of the members will be held annually, to receive the report on the affairs of the society.

The assured are protected by an ample paid up capital. The whole of the profits are divided among the assured.

At the end of December, 1853, being five years—and afterwards annually—the assets of the life assurance department will be computed, the profits ascertained and apportioned, and a sufficient sum reserved to meet all the contingencies of succeeding years; the whole of the profits will be divided ratably among the members assured for the whole term of the policy, the payment of the second premium, which will entitle them to participate in proportion to the amount and number of years paid, and any sum either to be added to the policy, or be applied in reduction of the premium, or the value paid to the assured.

THE BUSINESS OF THE LIFE DEPARTMENT

Assurances on single lives, on joint lives, and on survivorships. Lives not considered perfectly admissible on the ordinary terms assured at rates of premiums corresponding with the extra risk.

Assurances on the lives of persons about to proceed to foreign climates. Separate tables framed for those who do not desire to participate in the profits.

Annuitants for lives and limited terms, immediate and on survivorship. Deferred annuities to commence at specified ages. Tables to secure a deferred annuity of £10 and upwards during life. Endowments of every description to be granted.

Premiums payable by annual, half-yearly, or quarterly payments; or by a single payment; or by payments for a certain number of years, or by an increasing or decreasing scale of premiums.

One-half of the premiums may remain unpaid at simple interest for the first 7 years, and may be then paid off, or remain a debt upon the policy, at the option of the assured. And all other sound and practicable provisions contingent on human life, and for terms certain.

Residence.—The assured will be allowed to reside in any part of Europe, in Australia,

Asia, New Zealand, Canada, Cape of Good Hope, Madeira, and in any part of the world distant more than 35 degrees from the Equator.

Whole world policies are granted to persons assuring on the lives of others on payment of an extra premium.

INTEREST IN POLICIES.—A party having had an interest in the life assured shall not lose the benefit of the policy, although his interest shall have terminated before the death of the assured.

RENEWAL OF POLICIES.—If an assured be unable to pay the premiums, he will be allowed, on giving due notice, to charge the amount thereof upon his policy, to the extent of its value, thereby preserving the assurance during a period of difficulty, and so preventing the sacrifice of the provision he had made for his family. This feature is peculiar to this office, and affords a most important advantage to policy holders, by thus avoiding the forfeiture of a valuable policy.

Death by duelling or suicide will not invalidate the policies of this society, unless they be the property of the deceased at the time of his death, in which case the society will repay to his representatives all the premiums which shall have been received.

ALL POLICIES INDISPUTABLE AND ISSUED FREE OF STAMP DUTY TO THE ASSURED.—This society, considering the charge for policy stamps as a tax upon prudence, and a great impediment to the full development of life assurance, have determined to relieve assured at once of this burden, and charge it as a working expense upon the office.—No admission nor entrance fees are required, nor is any charge made for the policy.

Medical practitioners paid by the office for every case referred to them for their professional opinion.

GUARANTEE DEPARTMENT.

This society embraces the business of public guarantee, united with assurance on life, for the fidelity of persons in situations of confidence and trust, and providing against losses arising through dishonesty or failure, to account in lieu of the uncertain protection afforded by the system of private guarantee.

The principle of public guarantees has proved, from experience, so successful in its application to the employers so guaranteed, and the employed so assured, that the Lord Commissioners of her Majesty's Treasury have, by a special minute, empowered the heads of the Government department to receive the guarantee of a public company for those appointed to offices of trust and responsibility under the Crown.

The directors, in order to provide against the numerous cases of hardship and constant uncertainty to which private bondmen are exposed, have prepared tables expressly for this company, to grant policies for fidelity of trust, combined with policies of assurance on life, deferred annuities, and endowments to persons of approved character, about to be appointed to, or holding situations in, Government offices, banks, mercantile houses, public institutions, railway, insurance companies, and all other situations, where security against fraud or failure is required.

The value of this union of the two principles, combined with life assurance, the surety policies hold out to him, who with moral integrity unites the possession of an eligible life the solid advantages of the per centage he is annually paying being no longer an unproductive, although an unavoidable tax upon his earnings, all benefit from which expires with the tenure of his present employment, and ceases with his life. But, on the contrary, the union of life assurance with guarantees secures to his family in the latter case, and to himself, on the cessation of occupation arising from any cause not produced by want of honesty on his own part, a full, direct, and immediate participation in the profits of the office, to the prosperity of which the premiums paid on his own policy have contributed their proportion. The directors will grant policies for fidelity of trust, independently of policies of assurance on life, &c., at moderate rates of premiums, varying according to the extent of the risk.

Prospectuses, and every further information, may be obtained from the actuary, at the office of the society, No. 31, Cornhill, London; or at the offices of the agents to the society.—Local agencies will be formed in Wales, Cornwall, and in the principal towns of the United Kingdom.

Persons desirous of being appointed agents, are requested to apply personally, or by letter, to the managing director, AUG. COLLINGRIDGE.

EUROPEAN LIFE INSURANCE AND ANNUITY COMPANY.

ESTABLISHED JANUARY, 1819.

Empowered by special Act of Parliament, 7 and 8 Vic., cap. XLVIII.

Every description of risk contingent upon life assured. Four-fifths of the profits are appropriated as a bonus to holders of policies granted on the participating scale. The last division averaged from 10 to 37½ per cent. on premium received during the preceding seven years.

A table for insurers on the non-participating scale, at a reduced rate, has recently been computed. Permission to proceed to, and reside in, the British colonies, or any country not lying within the 33d parallel of latitude upon payment for sea-risk only.

Age and state of health admitted. Proposals may be passed daily. Every information can be obtained on application to the secretary, at the office, No. 10, Chatham-place, Blackfriars, London.

GEORGE W. S. LAGO.

PLANTAGENET GUARD RAZOR.

BY ROYAL LETTERS PATENT.

Under the special Patronage of the NOBILITY and GENTRY, the ARMY and NAVY, the CLERGY, the BAR, and the FACULTY.

This Guard Razor is made of the finest tempered steel, imparting a matchless smoothness and keenness to the edge, and the addition of the movable Guard causes the Razor to glide with safety over the face, removing the beard without cutting the skin.

The simplicity and safety of this invention is so complete, that the Guard Razor can be used by the blind, the short-sighted, the bedridden, and the paralysed, with perfect safety. Every razor is warranted, and will be exchanged if imperfect. Printed descriptive particulars sent post free.

Prices.—Best Ivory handles per pair, 16s.; black handles, 12s., sent post free for 8d. each extra. A pair, with Ivory handles, in Russia box, one guinea, post free 1s. 6d. extra. A single razor, with splendid electro gilt guard, in roan case, half-a-guinea, post free 8d. extra.

C. STEWART & CO., PATENTEES.

REMOVED (from 140, Strand) to No. 24, CHANCERY-CROSS.

Caution.—Every Guard is stamped with the Patentees' Signature of "C. STEWART and CO.," to intimate which is forged.

AGENTS.

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